

IRON AGE

104TH ANNUAL ISSUE • A CHILTON PUBLICATION • JANUARY 1, 1959

METALWORKING FORECAST FOR '59

Two Special Surveys:

Industry's Latest Spending Plans — P. 109

The Outlook for Prices and Profits — P. 153

Digest of the Week — P. 2-3

ARISTOLOY

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PROGRESS AT BETHLEHEM STEEL

In Steelmaking

Vacuum pouring of ingots is a major advance in the manufacture of sounder, stronger, large-size forgings. In the vacuum-casting method, developed by Bethlehem, ingots as large as 250 tons are poured in a high vacuum, reducing the volume of hydrogen. The result: more strength, longer life for shafts, rotors and other large forgings in critical, highly stressed applications.



In Mining

One of the largest underground iron ore mines brought into production in the eastern United States in the last 50 years is Bethlehem's Grace Mine at Morgantown, Pa. First shipment of iron concentrate was made to a Bethlehem steel plant in November. Grace Mine is an important addition to the nation's domestic ore supply.



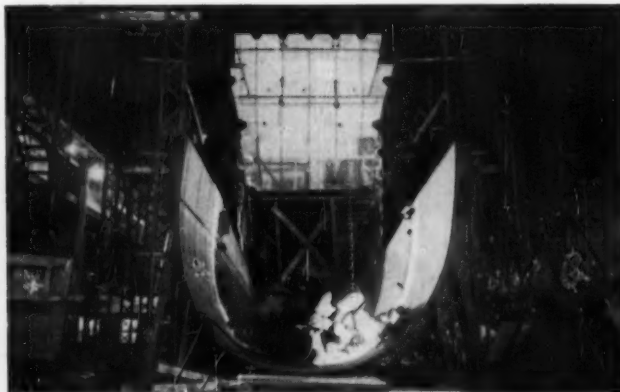
In Safety

Who's had the safest day? While he's on the job in a Bethlehem steel plant, Dad is actually many times safer than the children at school, or even than Mother at home. Continuing progress in safety is a "must" at all Bethlehem operations—with the result that for the sixteenth consecutive year, a Bethlehem plant has taken first place in the National Safety Council's annual Metals Section contest among the nation's twenty largest steel plants.



In Construction

Largest office building to be constructed in New York City in the last quarter century is the 60-story Chase Manhattan Bank Building. Deep in the heart of the city's financial district, Bethlehem crews are erecting some 50,000 tons of structural steel for the new bank and office, including six full stories below street level. The joining of structural steelwork is speeded with high-strength bolts. Shown here is a model of the completed structure.



In Shipbuilding

First nuclear-powered surface warship. Shown above is the U. S. Navy's cruiser *USS Long Beach*, designed by Bethlehem and building at its Quincy, Mass., shipyard. When completed in 1960, the 14,000-ton cruiser will pack a lethal punch with her ability to launch the Regulus Mark II and other guided missiles. Pioneering in the application of nuclear energy to marine power plants, Bethlehem has also designed and will build a nuclear-powered frigate, to be first of her class.



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IRON AGE

January 1, 1959—Vol. 183, No. 1

Digest of 1959 Outlook for

*Starred items are digested at right.

EDITORIAL

Are you giving up? Don't! You Can't Afford To 7

ANNUAL FEATURES

*Metalworking Capital Appropriations	109
*Special Report: Will Labor Stall Recovery Forecast for 1959?	121
The Steel Outlook	123
Federal Spending Will Spiral	124
More Spending for Roads in '59	125
Steel Reaps Technical Harvest	126
Iron Ore Picture Is Cloudy	127
Appliances Due for Sales Gain	128
Aluminum Expects a Big Year	129
Conventions and Meetings for 1959	288
*Trade Association Directory	296

ANNUAL REVIEW—FORECAST

Newsfront	9
Report to Management	135
Automotive	137
Washington	141
West Coast	143
Machine Tool	145
*Executives Forecast	153

PRICE AND PRODUCTION DATA

Steel	272
Nonferrous Metals, Powders	279
Pig Iron and Iron Ore	282
Ferroalloys, Furnace Bricks	285
Scrap	286

MARKETS & PRICES

Market Planning Digest	119
The IRON AGE Summary	311
Purchasing	312
Steel Product Markets	314
Index to Prices	315
Iron and Steel Scrap Markets	316
Nonferrous	320
Clearing House	332

REGULAR DEPARTMENTS

Fatigue Cracks	13
Men in Metalworking	147
New Materials, Components	232
New Equipment	244
INDEX TO ADVERTISERS	340

METALWORKING EXECUTIVES FORECAST

OVERALL OUTLOOK

General Improvement—A survey of top level executives in 20 metalworking industries has encouraging results. For the most part, they're optimistic about sales and profits. But they see the wage-price spiral continuing. P. 153

INDUSTRY SURVEYS

Construction Equipment—Tough competitive days ahead. P. 160

Conveyors, Cranes, Hoists — A steady market ahead. P. 164

Copper and Brass Rolling—Improvement despite imports. P. 168

Electric Motors—Improved price policies will help sales. P. 172

Controls, Switchgear — A lot hinges on capital spending. P. 176

Fasteners — Their customers' stocks are at rock bottom. P. 180

Gray Iron — Mechanization and designs are improved. P. 184

Heat Treating Equipment—New designs to spur sales. P. 188

Industrial Trucks — More optimistic than the average. P. 192

Instruments—Look for a general, 14 pct sales increase. P. 196

Machine Tools — Cost-cutting trend means more orders. P. 200

Malleable Iron—Ready to launch a big promotion campaign. P. 204

Metalworking

METALWORKING FORECAST FOR '59

104th ANNUAL ISSUE: The general flavor of this year's reports to industry is optimistic. But there are many unanswerable questions concerning the 12 months ahead for metalworking. In this issue, The IRON AGE sifts through information from every major market in an effort to make the most reliable possible forecasts.

Nonferrous Foundries — New alloys may increase sales. P. 208

Pumps and Compressors — Best market is construction. P. 212

Stampings — Backlogs are down but optimism prevails. P. 216

Steel Forgings — Captive shops hurting independents. P. 220

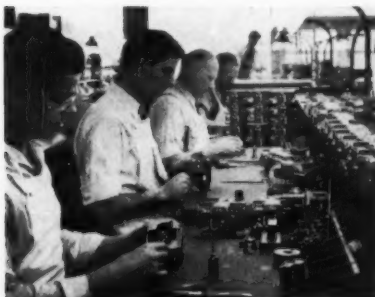
Steel Foundries — Competition will be rough and tough. P. 224

Welding Equipment — A growing market in automation. P. 228

MARKET OUTLOOK—1959

LABOR

Will It Stall Recovery?—A strike in steel alone could seriously retard the economic upturn so freely predicted for 1959. P. 121



SIGNPOSTS

Steel—An active first half, then a slowdown. P. 123

Government Spending—No letup is in sight. P. 124

Roadbuilding — More spending than in 1958. P. 125

Steel Technology — New basic

concepts emerging rapidly. P. 126

Iron Ore — Imports and strikes pose problems. P. 127

Appliances—Replacements may help boost sales 8 pct. P. 128

Aluminum — Good reason to expect a 20 pct increase. P. 129

Automotive—Hopes rise as sales of '59 cars begin to climb. P. 137

Washington—Most business indicators are pointing up. P. 141

West Coast—A market for over 6.6 million tons of steel. P. 143

Machine Tool—Builders banking on a marked improvement. P. 145

INDUSTRY'S LATEST SPENDING PLANS

APPROPRIATIONS STUDY

New Market Tool—Changes in capital appropriations for individual industries within metalworking are of direct interest for marketing studies and management planning. This new survey reports quarterly

trend of capital appropriations in 36 metalworking industries. Since



the capital goods industry usually leads the rest of the economy, this survey can be used to gage business in coming months. P. 109

PRICE DATA

And Production Figures—Sixteen pages of data on materials ranging from iron ore to finished steel are available as a reference guide. P. 271

TRADE ASSOCIATIONS

Latest List — Names, addresses, officers, and 1958 meeting dates of leading trade associations are included in this directory. P. 296

NEXT WEEK

EUROPEAN MARKETS

Selling Abroad—What is the best way for an American company to do business abroad? Willard F. Rockwell, Jr., president of Rockwell Manufacturing Co. (right) in next week's special report tells why his company favors manufacturing overseas.

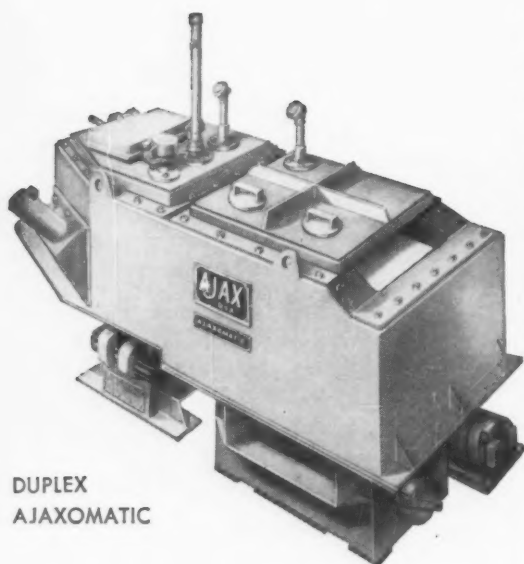


CAN WE STILL AFFORD HAND-LADLING?



AJAXOMATICS

bring automation to die casting



DUPLEX
AJAXOMATIC

The Duplex AJAXOMATIC melts aluminum pig and gates right at the die casting machine. By pushing a button the operator initiates the complete casting cycle: the die closes and the Duplex AJAXOMATIC pours the exact required amount of molten metal directly into the cold chamber. The operator just removes the finished casting at the end of the cycle.

Automation, however, is only part of the AJAXOMATIC story. The Duplex AJAXOMATIC also gives assurance of consistent quality. The quality of a finished casting begins with the proper melting of the metal. 60 cycle induction with its two basic features of internal heating and electromagnetic stirring is used exclusively in the Duplex AJAXOMATIC. Here are the unique characteristics of the Duplex AJAXOMATIC:

Precision temperature control — at low temperature	No supply ladle system or hand ladles
Alloy uniformity — no segregation	Precise weight of automatic pour
No gas porosity	Comfortable working conditions
Low metal loss	Low maintenance

The standard Duplex AJAXOMATIC is rated 120 kw to produce 500 lbs per hour of castings ranging from ½ lb to 30 lbs. Other AJAXOMATICS are available to suit a wide range of production requirements, including units supplied from central melting systems. May we have an opportunity to study your requirements?



ENGINEERING CORPORATION

TRENTON 7, NEW JERSEY

60 CYCLE INDUCTION MELTING

Associated Companies:

Ajax Electrothermic Corporation

Ajax Electric Company

How the Armco Stainless "Wardrobe" of Finishes Can Help You Save

No matter how they are finished on the outside, Armco Stainless Steels are always the same high-quality, corrosion-resisting steels all the way through. But you can save money by specifying the *one finish* from the Armco Stainless "wardrobe" that best suits your product's needs and requires the fewest additional finishing operations in your plant.

MANY ARMCO FINISHES TO CHOOSE FROM

Because they serve in many different products, Armco Stainless Steels are available in a wide variety of surface finishes.

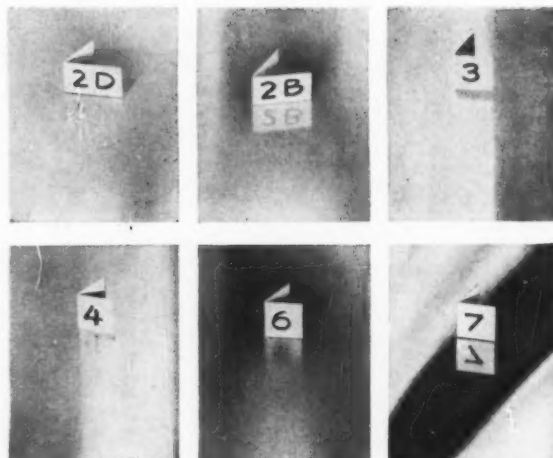
Tough jobs call for workclothes. One of the unpolished surface finishes is generally most economical in high-temperature industrial uses, involving highly oxidizing or very corrosive atmospheres. On the other hand, when appearance, sanitation, or easy cleaning come first, a polished stainless surface is required.

Patented Armco processes offer additional possibilities. Small parts and intricately-shaped pieces can be economically polished by Armco's electropolishing process. Another Armco process "Ebonizes" (blackens) stainless steel parts.

BROAD RANGE OF STAINLESS

Remember, too, Armco Stainless Steels are available in a wide range of standard and special grades—in gages, sizes, and shapes to suit design needs. For more information about Armco's Stainless Steels or their surface finishes, just fill in and mail the coupon or call your nearest Armco Sales Office.

Small or intricately-shaped stainless pieces like these can be economically polished by the Armco Electropolishing Process.



Pictured are six of the eight mill finishes available on Armco Stainless Steels. No. 2B and No. 2D Sheet Finishes correspond to No. 1 and No. 2 Strip Finishes, respectively. Not shown are the hot-rolled, annealed and pickled No. 1 Sheet Finish for industrial products and the new Armco **SOFTONE** Finish for Type 430 Stainless Steel strip. **SOFTONE** was developed to provide a soft, lustrous surface, yet avoid mirror-like reflectivity.

Here's a demonstration of the durability of the blackened finish produced on stainless steel by the Armco Ebonizing Process. After 10 years' exposure in a mild industrial atmosphere, a simple waxing (upper part) brings out the full finish beauty of this Ebonized sample.



ARMCO STEEL CORPORATION, 1109 Curtis St., Middletown, Ohio

I would like more information about:

☐ Armco Stainless Steels

☐ These Armco Stainless finishes _____

New steels are born at Armco

NAME _____

FIRM _____

STREET _____

CITY _____ ZONE _____ STATE _____

ARMCO STEEL



Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products

Are You Giving Up? Don't! You Can't Afford To!

Many forthright people seem to be giving up the race for survival. It isn't too clear now. But in 10 years it may be.

It appears as if the easiest way is now the best way. And who dares lay the blame? Around us we see rewards for laziness and lack of brains. We see the premium on power.

Without "blaming" the bureaucrats (they are people as you and I) we must agree that government is a paradise for them. And why not? We made it possible for this to be so.

What about putting aside something for the future? Why do it? Maybe it won't be worth much if erosion of the dollar continues.

Many who used to "speak up" now hold their tongues. What's the use? No one ever listens anyway. If they do, they don't understand. Why be labeled a sourpuss. It's bad for business too.

Let's watch our tempers too. The keep-well-get-ahead books all say to take it easy. No use to step up the pressure and run the risk of an "accident." Just sidestep these things and let the lug get away with it. It isn't worth the fuss.

If the decisions are too numerous (or difficult), the paper work maddening, and the "return" too

paltry, take it easy, some people argue. And why not? Others are getting away with it.

If our competitor is doing better, let him alone. He will probably fall on his face. Maybe his new product won't go over. If it does, so what? There is still a lot of time to catch up.

Maybe we ought to pull out of all this foreign stuff too. They only spend the money we "give" them and make fun of us behind our backs—or in their own language which we don't speak.

And about this inflation stuff. Perhaps the writers and economists are over-doing it. Maybe Federal Reserve's Bill Martin is talking through his hat. After all he is a young fellow, and what's a little inflation. Far better than serious deflation isn't it? And besides things have "changed."

It may be time to "give up" because our future depends upon an atomic thread which may break any day. Maybe the Russians are nice people and if so their leaders have to be, don't they? Why risk our freedom and our lives for a little misunderstanding?

Let's give in to all these things. Then life WON'T be worth living because there won't be any life—as we know it.

Tom Campbell
Editor-in-Chief

ANOTHER RYERSON PLUS: Production-ready steel



"There's the front end of our production line ... right on time"

Steel right off the truck—ready for your production line . . . your steel supply can be that simple when you rely on Ryerson. You order only the kind and quantity of steel you need—as you need it—and cut costs all along the line.

You reduce investment in equipment as well as materials. You save valuable storage space . . . reduce

handling costs, scrap loss, taxes, etc. You gain complete flexibility of steel supply without long-term commitments . . . and assure a ready, steady flow of material to keep production stepping. You're never caught short . . . you're never overloaded.

Ryerson's size, facilities, staff and service *attitude* assure dependable delivery to meet regular schedules or to handle special short-run orders. Whatever you need, this unsurpassed source of Certified Quality steel is at your finger tips. Phone your nearby Ryerson plant today.



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Member of the **INLAND** Steel Family

Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.

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Trend in Throw-Away Inserts

Throw-away carbide inserts saw expanded use in single-point tools during 1958. But even more significant is the trend toward use of inserts in the multiple-point tool field. With good cutter-body design, throw-aways can be used to take heavy cuts. In one pass of a tool, such operations as boring, facing and chamfering can be performed without the need for time-consuming setups.

Standards for Make-or-Buy

Revisions to Air Force Procurement Instruction 53-101 will standardize handling of "make-or-buy" portions of contracts. Aim is to insure that all concerned know whether the contractor will build or buy components. Over-all costs and subcontracting issues are involved. Most affected are cost-type and incentive contracts and those requiring use of government facilities.

Plan for More Oxygen Steel

Look for more oxygen steelmaking vessels to be installed as capacity is added or replaced. Another major mill has already made definite plans for oxygen vessels. Feeling is the new process will be suitable for high carbon as well as low carbon steel.

Revise Incentive Plans

Watch for a major drive to bring incentives into line during 1959. Top management is pushing the theory that most incentive plans currently in use are outmoded. They are not promoting productivity increases to offset constantly rising capital equipment and wage costs. One management consultant firm reports volume of work in this field has tripled in 1957 and 1958 and will go up again sharply in 1959.

Building Block Meetings

An auto industry committee is scheduling more meetings with special machine builders. A series is planned for next week. It's reported by

insiders that the program will include standardization of such fundamentals as work heights, adhering method (wing base to main base), mounting dimensions and power units. Presumably machine builders will report on how far they feel they can go on proposals made at first meeting in Chicago last fall.

Hike in Cost of Space Probe

Cost of probing outer space is exceeding all earlier estimates. Heads of the government space-study groups are readying new money demands they'll present Congress shortly. Example of how costs are to rocket: National Space Administration wants over \$500 million next year, a full billion the following year.

Concern over Steel Imports

At least two important steel service centers are quietly calculating the expected amount of imported steel, what the price will be, and how much of it will be warehoused. Imported steel hadn't been considered a cause for serious concern in products other than wire and tube before 1960-1961. Now several steel firms are expressing real concern over second-half 1959.

Year of Small Car Decision

Sales of compact and small cars, both domestic and imported, should approach one million units this year. This volume will be more than enough to cause Big Three automakers to announce their entries for this market in time for the 1960 model year.

Fool-Proof Alarm System

The first practical national attack alarm system may be ready for use in 1959. Civil Defense officials are completing tests on a miniature device which plugs into ordinary wall sockets. In case of attack, power companies alter power cycles slightly, touching off the alarm. It could be used for homes and offices or wired into larger plant systems. False alarms are almost impossible.



How COMMERCIAL'S "Die Bank" cut component unit cost from \$8.49 to \$2.59

Wheel covers are important components in the four-wheel drive, aircraft towing tractors manufactured by the American Coleman Company. Because the tractor's front and rear wheels are both steerable, a sturdy, dished-out, custom-produced cover was required to fully protect the wheel enclosed mechanism against possible damage from stones and debris.

Full consideration was first given to producing the covers as stampings. Low quantity requirements and the high cost of special tooling (\$2,300), however, made the unit cost prohibitive.

The first wheel cover was finally produced as a machined, malleable iron casting at a unit cost of \$8.49, plus a pattern charge involving \$200. A unit cost reduction to \$3.50, plus a \$250 chuck cost, was later effected by hand spinning the covers.

Still seeking to reduce unit costs even further, American Coleman discovered and investigated COMMERCIAL'S "Die Bank" facilities.

The result: By using forming dies from COMMERCIAL'S "Die Bank" of almost 50,000 different die components, tooling costs amounted to just \$80

—instead of the \$2,300 originally estimated for new dies. The unit cost of each cover now custom stamped by COMMERCIAL is only \$2.59.

For more complete information on COMMERCIAL'S "Die Bank" write to Commercial Shearing & Stamping Co., Dept. K-1, Youngstown 1, Ohio.

COMMERCIAL
shearing & stamping

SPECIALISTS IN THE SHAPE OF THINGS TO COME

LETTERS FROM READERS

Workmanship

Sir—Your editorial "Pride of Workmanship . . . What Has Happened to It?" should be reprinted by the millions and distributed throughout the U. S. It most certainly is true; as true as the day is long. You are referring to "The Vanishing American, 20th Century."

This man you wrote about is everywhere, from the janitor to the chairman of the board. The individualist you spoke of is becoming increasingly aware of the need to "get along with people." The pressure to conform is relentless.

You asked many questions and posed several problems. You suggested possible reasons. But what are the answers? Is it lack of recognition and appreciation? Is it due to the failure on the part of industry and commerce to engender ambition, desire, and initiative? Is it because of union policy? Is the general public to blame?—I. E. Otto,

Business Battles

Sir—As a small business man, I would like to comment after reading the two articles on page 47 of the Nov. 27 issue (Political Left is on

the Offensive" and "Labor Politicos Woo Votes"):

For business to win battles with politicians and labor leaders is as difficult as for the U. S. to win arguments with Russia. Business and the U. S. try to hold to truthful facts. Their opponents do not.—E. A. Wilcox, E. A. Wilcox Co., San Francisco.

Mixed Fruit

Sir—Have just read "Pound of Car" in the Fatigue Cracks column of your Dec. 4 issue. Mr. Kimberly apparently doesn't believe in separating apples from oranges for price comparison purposes.

The following examples will illustrate my point: A wrist watch can run into hundreds of dollars per pound. On the other hand, a 50,000 ton forging press costs approximately 80¢ per pound—installed.

What has Mr. Kimberly proved? —L. Berg, Engr., Engineering Supervision Co., New York, N. Y.

Washed Brains

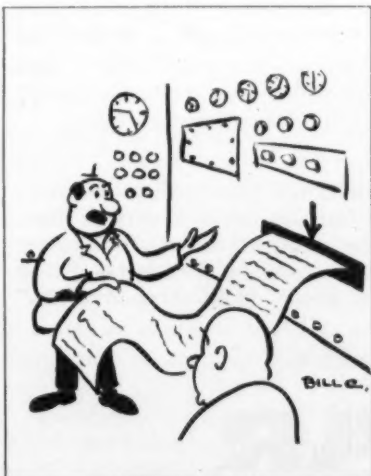
Sir—Re: Editorial — "Who is Brainwashing? We're Doing it Ourselves"—Nov. 20 issue: Touché!—G. F. Fry, Jr., Pres., True-Trace Sales Corp., El Monte, Calif.

Viewpoint Freeze

Sir—I liked your editorial on "Frozen Viewpoints: Don't Be Caught With Them."

Your new Survey of Metalworking Capital Appropriations is expected to give us some early leads.

As you may know, this is very much the kind of leading series which the Subcommittee on Economic Statistics has been so anxious to encourage. Statisticians and economists will be most grateful for this new tool.—J. W. Lehman, Clerk, Joint Economic Committee, Congress of the United States.



"It wants a 2000-volt raise."



Carl G. Paulson,

Director of Hayes Research and Development Group, Reports...

NEW NITROGEN POTENTIALS

Assume you face the need for high purity nitrogen at a low per-unit cost figure. You want to use it as a heat treating atmosphere . . . or as a "blanket" for hydrocarbons or food products . . . or for any one of a number of industrial applications. How can you bring this safe, inert gas out of the lab and into general use without inflating your costs?

Our R & D group reasoned that a low cost generator was the logical solution and followed up and developed a completely new piece of equipment—the C. I. Hayes "Nitro-Gen." This unique combination of stationary retort and cyclical programmed dryer has cleared the way for production of 99.99% pure inert gas at approximately 20¢ per thousand cubic feet.

The immediate benefits of low cost nitrogen as a protective heat treating atmosphere were revealed in initial metallurgical applications. For example, test bars of Type 8670 Carbon Steel were subjected to routine hardening under (1) nitrogen, (2) dissociated ammonia, and (3) endothermic gas atmospheres—each test followed by routine oil quench and tempering. Hardness results from these tests proved identical . . . but a substantial boost in toughness showed up in the bars treated under nitrogen. The nitrogen atmosphere produced 100% greater toughness according to a transverse break test.

Safety alone makes nitrogen worthy of careful consideration. If this non-combustible gas can be produced efficiently and economically (and we're doing it!), Hayes Research and Development Engineers believe its potential—in heat treating and in other "blanketing" operations—is virtually unlimited. For further details on the new "Nitro-Gen" . . . now being demonstrated in our lab . . . request technical data.

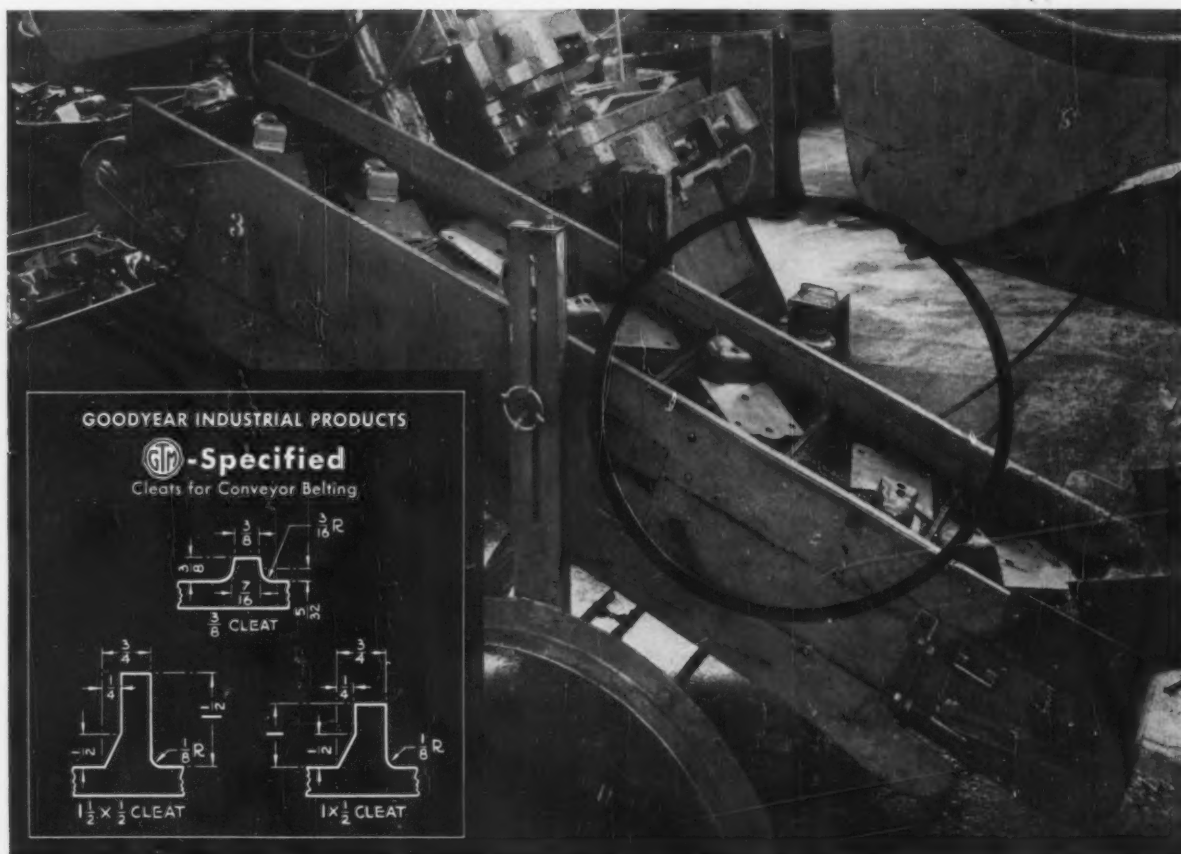


Established 1903

C. I. HAYES, INC.

821 WELLINGTON AVE. • CRANSTON 10, R. I.

Whatever the job, it pays to see HAYES for metallurgical guidance, laboratory facilities, furnaces, atmosphere generators, gas and fluid dryers.



They're raising production—and lowering costs by 1/3

Portable conveyors—between production lines on different levels—were a “must” at this Midwestern automotive parts plant. But the specially constructed belts they used soon cut and flaked off. They became oil-soaked and accumulated dust—dirtying the parts. Worse still, they stretched—had to be taken up every 6 weeks. Even then, none lasted more than a year.

Then the G.T.M.—Goodyear Technical Man—recommended Style ORS Cleated Belts. They're made of rubber especially compounded for extreme resistance to oil, cutting and abrasion. And the tough, firm-gripping cleats are molded right into the rubber for durability.

The savings are impressive: The G.T.M.'s less-

expensive belts eliminated the need for parts washing. And after 3 straight years of full service—*three times the life of competitive belts*—they're still going strong.

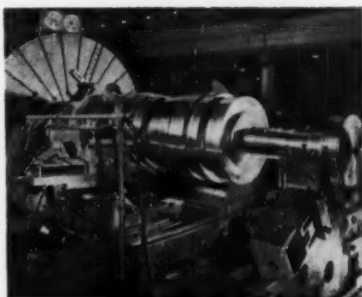
Like to have savings like these on your production lines? The fastest way to find out is to call the G.T.M. He'll be Johnny-on-the-spot if you contact your Goodyear Distributor—or write Goodyear, Industrial Products Division, Akron 16, Ohio.

• • •

IT'S SMART TO DO BUSINESS with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under “Rubber Goods” or “Rubber Products.”

CONVEYOR BELTING BY
GOOD YEAR
 THE GREATEST NAME IN RUBBER

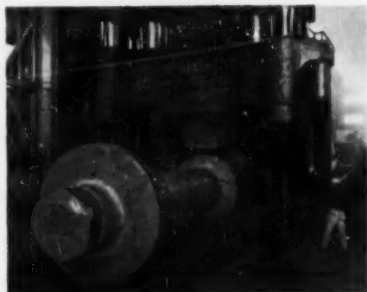
FATIGUE CRACKS



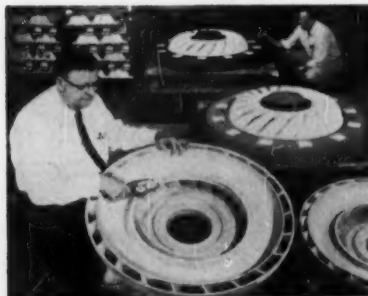
Special Alloys



Design Show Issue



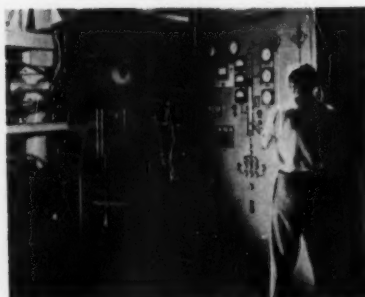
Forgings



Nonferrous Castings



Plastics



Vacuum Arc Melting

Farewell '58

With this, our 104th Annual Issue, we welcome 1959 and close the door on 1958—a colorful, crowded year for metalworking.

As always, The IRON AGE Annual Issue is packed with sound information about the old year and sound predictions about the new.

But we can't let 1958 go without some mention of our bright, four-color cover photographs during the year.

You'll find six of them reproduced above, this time, alas, in drab black and white. Five were feature illustrations for articles in our con-

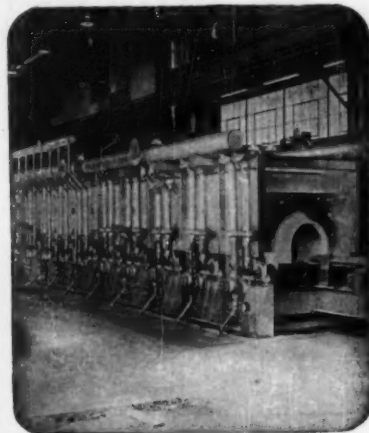
tinuing series—"How to Get More for Your Metalworking Dollar." The sixth highlighted the April 3 Design Show Feature Issue.

Welcome '59

While the photos above are not in their original techni-color form, we are again in a colorful mood to welcome the New Year. As a result this 342-page Annual Issue carries our first color cover for '59.

For complete details on the contents of this issue see Digest, pp. 2-3.

SPEED HEATING SAVE SPACE IMPROVE QUALITY WITH HI-HEAD



**R-S HI-HEAD HEATS 25 TONS SLAB
PER HOUR.. 75% LESS FLOOR
SPACE.. ONE FOURTH LABOR**

Now, heating of 25 tons of stainless steel slabs per hour is a continuous operation at Atlas Steels Ltd. The R-S Hi-Head Furnace reaches a high heat fast and maintains it uniformly in all parts of the furnace for the complete cycle. Heating time is reduced . . . there is no overheating of slab edges . . . and uniformity is assured on every piece. Labor is one-fourth that required on conventional furnaces. Floor space used is 75% less.

You can boost your "Quality Quota" if you heat with R-S Furnaces. For full technical details on faster slab heating write for the folder "Continuous Slab Heating."

R-S FURNACE CO., INC.
North Wales, Pa.



Car Hearth Furnaces
Continuous Furnaces
Rotary Hearth Furnaces



When Performance Is Critical...

Make Parts Like These From UDDEHOLM Spring Steel

Flapper valves are no better than the spring steel they're made of. And for these critical parts only the finest spring steel is good enough. That's why so many of them are made from Uddeholm tempered spring steel. A flapper valve must function flawlessly for years—the performance of the entire compressor depends on it. Manufacturers long ago found that Uddeholm's fine Swedish Spring Steel met these needs perfectly, *without fail*. It still does.

For your products The same dependable quality of Uddeholm spring steel can insure the performance of your product.

From Warehouse Stocks...

Uddeholm spring steels are available in a wide variety of grades, sizes, tolerances and finishes. Widths run from $\frac{1}{8}$ " to $16\frac{1}{4}$ "; thicknesses from .001" to .125". If you'd like assistance, or just information, call your Uddeholm spring steel representative today.

Uddeholm Spring Steel Quality Guarantees You...

- Maximum Fatigue Strength
- Uniform Hardness
 - Accurate Dimensions
 - Fine Micro Finish
 - Excellent Wear Resistance

Write For Our Spring Steel Stock List



UDDEHOLM COMPANY OF AMERICA, INC.

Tool and Die Steels
Cold Rolled Spring Steels

Offices and
Warehouses

New York: 155 East 44th Street, MUrray Hill 7-4575
Cleveland: 4540 East 71st Street, DIamond 1-1110
Los Angeles: 5037 Telegraph Road, ANgelus 2-5121

District Representatives

CHICAGO: Frank J. Mackin, Leroy E. Marshall, 55 East Washington, STate 2-1649
PHILADELPHIA: Frank T. Campagna, 1418 Walnut St., PENnypacker 5-2114

DETROIT: Warren H. Nugent, 17304 Lahser Road, KENwood 5-6340
PITTSBURGH: Lohmeyer Steel Co. 345 Mount Lebanon Blvd., LOCust 3-0122

COMING EXHIBITS

Ornamental Iron Trade Show—Jan. 8-10, Atlanta Biltmore Hotel, Atlanta, Ga. (National Ornamental Iron Mfrs. Assn., 1977 College Ave., N. E., Atlanta, Ga.)

Plant Maintenance & Engineering Show—Jan. 26-29, Public Auditorium, Cleveland. (Clapp & Poliak, Inc., 341 Madison Ave., New York 17.)

International Heating and Air Conditioning Show—Jan. 26-29, Convention Hall, Philadelphia. (International Exposition Co., 480 Lexington Ave., New York 17.)

Western Metal Show — March 16-20, Pan-Pacific Auditorium and Ambassador Hotel, Los Angeles. (American Society for Metals, 7301 Euclid Ave., Cleveland 3.)

Corrosion Show — March 16-20, Chicago. (National Assn. of Corrosion Engineers, 1061 M & M Bldg., Houston 2, Texas)

Industrial Finishing Show — June 15-19, Detroit Artillery Armory, Detroit. (Information: H. J. McAleer, 3171 Bellevue, Detroit 7, Mich.)

MEETINGS

JANUARY

Aluminum Window Mfrs. Assn.—Winter meeting, Jan. 7-8, Key Biscayne Hotel, Miami, Fla. Society headquarters, 75 West St., New York 6.

Institute of Scrap Iron & Steel, Inc.—Annual convention, Jan. 11-14, The Waldorf Astoria, New York. Institute headquarters, 1729 "H" St., N. W., Washington, D. C.

Society of Automotive Engineers—Annual meeting and engineering display, Jan. 12-16, Sheraton-Cadillac and Hotel Statler, Detroit. So-

(Continued on P. 18)

NEW!



Kidde dry chemicals kill more fire faster!

Granted top rating by Underwriters' Laboratories, these two new Kidde dry chemical extinguishers pack the *extra* punch you need to knock out stubborn blazes. These 2½- and 5-pound Kidde units put out as much fire as eight and sixteen one quart carbon tetrachloride portables respectively. They are perfectly balanced for fast action, are light in weight, easy to operate even while wearing gloves. And — no pin to remove, no valves to turn, no inverting or bumping needed. Just aim at fire and press the lever! Pressurized, they can be easily and quickly recharged with air or nitrogen. No pressure cartridge needed. Write for more information on these new Kidde extinguishers — easiest-to-operate of all dry chemical portables.

Kidde



Walter Kidde & Company, Inc.
149 Main St., Belleville 9, N. J.

Walter Kidde & Company of Canada Ltd.
Montreal — Toronto — Vancouver

VISIT KIDDE BOOTHS 1510-12 AT THE
CLEVELAND PLANT MAINTENANCE SHOW, JANUARY 26-29

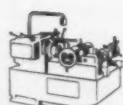
THREADING

at 581 r. p. m.

Suburban Industries, Bensenville, Illinois, is achieving these results with a compactly-designed LANDMACO 5C Threading Machine equipped with a 5/8" VVV LANCO Hardened and Ground Die Head. Performance is not limited to one application—both steel studs and continuously-threaded bars are produced at 581 R.P.M. (76 surface feet per minute).

Chaser life is excellent. For example: 10,000 studs of B 1113 steel, having a 1/2" UN thread 3/4" in length, are produced between chaser grinds. Furthermore . . . in the continuously-threaded rod application, with 1/2" 13 pitch UN threads in 12-foot lengths, 150 bars of B 1113 steel (1800 linear feet of thread) are produced between chaser grinds. The long life between chaser grinds is the result of using a rugged LANCO die head equipped with LANDIS Tangential Chasers which can be reground for 80% of their original length.

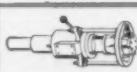
The 5C LANDMACO Machine is manufactured in a single-spindle model for threading all diameters from 3/16" to 5/8" to Class 4 fit. The availability of lead screw feed, air-operated carriage return, air-operated carriage fronts, and special fronts for difficult-to-grip workpieces allow maximum production efficiency. Send us specifications of your workpiece and ask for Bulletin H-74 . . . let us show you how a LANDMACO Machine will handle your threading operation efficiently and economically.



Threading Machines



Die Heads—
Rotary & Stationary



Taps—Collapsible
& Solid Adjustable



Centerless Thread
Grinding Machines



Thread Rolling Tools

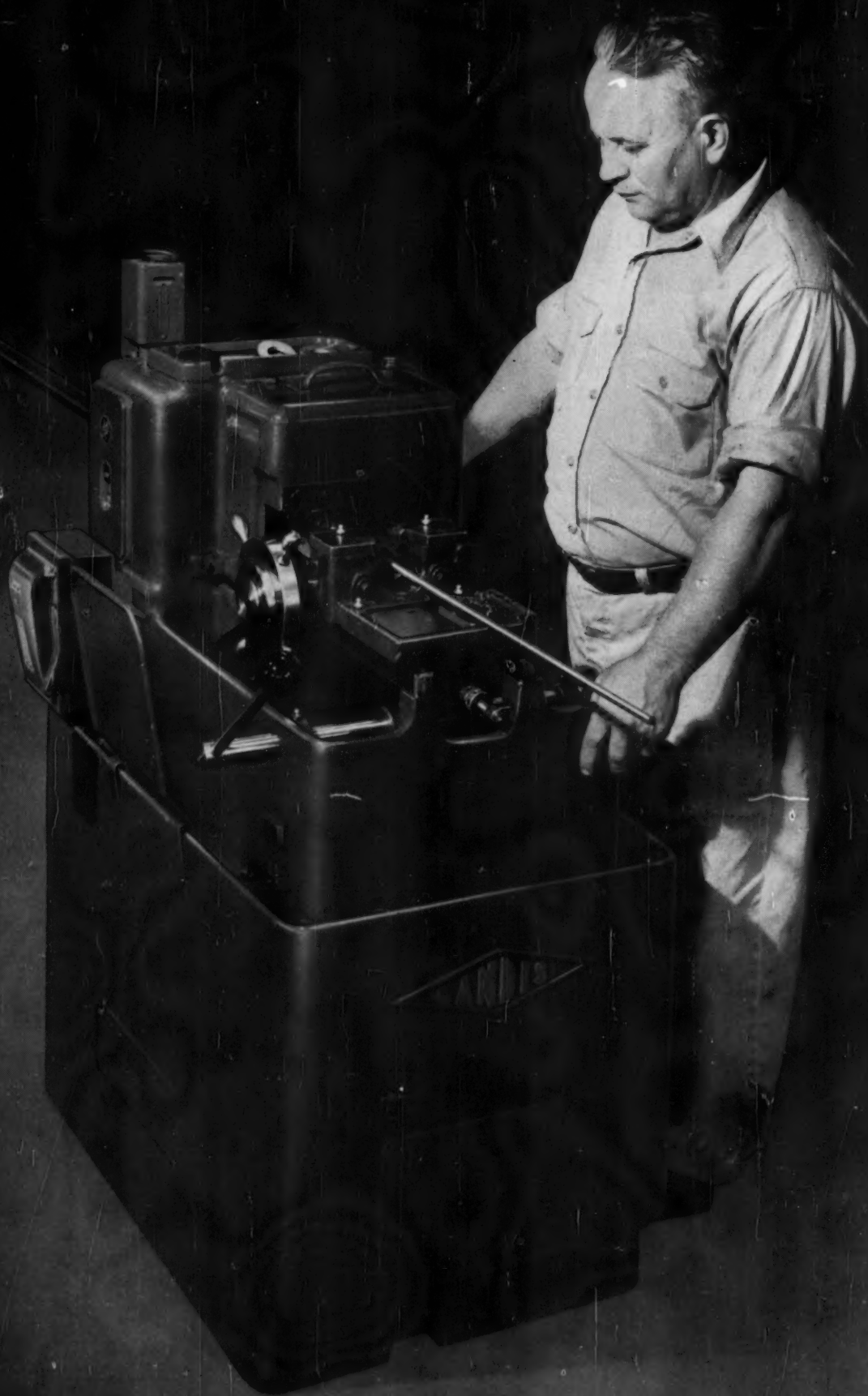


Thread Rolling Machines

LANDIS Machine COMPANY

WAYNESBORO • PENNSYLVANIA • U. S. A.

THE WORLD'S LARGEST MANUFACTURER OF THREADING EQUIPMENT





SILENT HOIST KRANE KAR

HYDRAULIC Boom Swinging,
HYDRAULIC Topping, HYDRAULIC
Telescoping, HYDRAULIC Load
Hoisting! Fluid Drive, Power
Steering. 5 sizes: 1½, 2½, 5,
10 and 12½ ton capacities.
Ask for Bulletin No. 79.

suddenly
everything gets done faster,
better—at savings!

Just add a SILENT HOIST KRANE KAR or LIFTRUK to your materials handling program—then watch them accelerate your Receiving, Production, Shipping and Plant Maintenance operations! With today's competitive markets and rising labor costs, SILENT HOIST helps you increase your output per man . . . lowers your production costs! Worth looking into?

SILENT HOIST & CRANE CO., Brooklyn 20, N.Y.

9 sizes: 3, 5, 6, 7½, 8,
10, 12, 15,
30 tons capacity.
Fluid Drive,
Power Steering.
Ask for
Bulletin No. 77.



SILENT HOIST LIFTRUK

EXHIBITS, MEETINGS

(Continued from P. 15)

ciety headquarters, 485 Lexington Ave., New York 17.

Industrial Heating Equipment Assn., Inc.—Annual winter meeting, Jan. 19-20, Cleveland. Society headquarters, 1145 19th St., N. W., Washington 6, D. C.

Steel Kitchen Cabinet Mfrs. Assn.—Winter meeting, Jan. 20, Blackstone Hotel, Chicago. Association headquarters, 1008 Engineers Bldg., Cleveland.

Steel Shipping Container Institute, Inc.—Winter meeting, Jan. 20-21, St. Regis Hotel, New York. Society headquarters, 600 Fifth Ave., New York 20.

The American Boiler Mfrs. Assn.—Mid-winter meeting, Jan. 22, Statler Hotel, Cleveland. Society headquarters, 4062 Mayfield Rd., Cleveland 21.

Hoist Manufacturers Assn.—Annual meeting, Jan. 22, Palm Beach Biltmore, Palm Beach, Fla. Association headquarters, One Thomas Circle, Washington 5, D. C.

Institute of Surplus Dealers—9th annual trade show, Jan. 25-28, New York Trade Show Bldg., New York. Institute headquarters, 700 Eighth Ave., New York.

Truck Trailer Manufacturers Assn.—Annual convention, Jan. 26-28, Hollywood Beach Hotel, Hollywood, Fla. Association headquarters, 710 Albee Bldg., Washington 5, D. C.

Society of Plastic Engineers, Inc.—Annual technical conference, Jan. 27-30, Hotel Commodore, New York. Society headquarters, 65 Prospect St., Stamford, Conn.

Association of Roller & Silent Chain Manufacturers—Annual meeting, Jan. 28-29, Drake Hotel, Chicago. Association headquarters, 3343 Central Ave., Indianapolis.



In the Caterpillar Tractor Co. plant, this D9 Tractor is being lowered onto its track roller frame assembly. Many important components of both tractor and its crawler track are fabricated from Youngstown Bars.

Accent on Excellence

Youngstown carbon and alloy steel bars

Whether they're busy at work on marine, mining, snow-removal, agriculture, oil field or logging jobs, progressive contractors and construction engineers—throughout the civilized world—rely heavily on the versatility and rugged dependability of their Caterpillar machines.

Built by Caterpillar Tractor Co., Peoria, Illinois, these advanced-design, diesel-powered, crawler units make use of the metallurgically-controlled physical properties of Youngstown Carbon and Alloy Steel Bars to provide increased strength and durability—as well as long, trouble-free service life.

Wherever steel becomes a part of things you make, the high standards of Youngstown quality, the personal touch in Youngstown service will help you create products with an "accent on excellence".



Caterpillar
REG. U.S. PAT. OFF.

Going is rough across this river in Pennsylvania, but the maneuverability of these Caterpillar No. 583 Pipelayers makes it "child's play" to position pipe accurately.

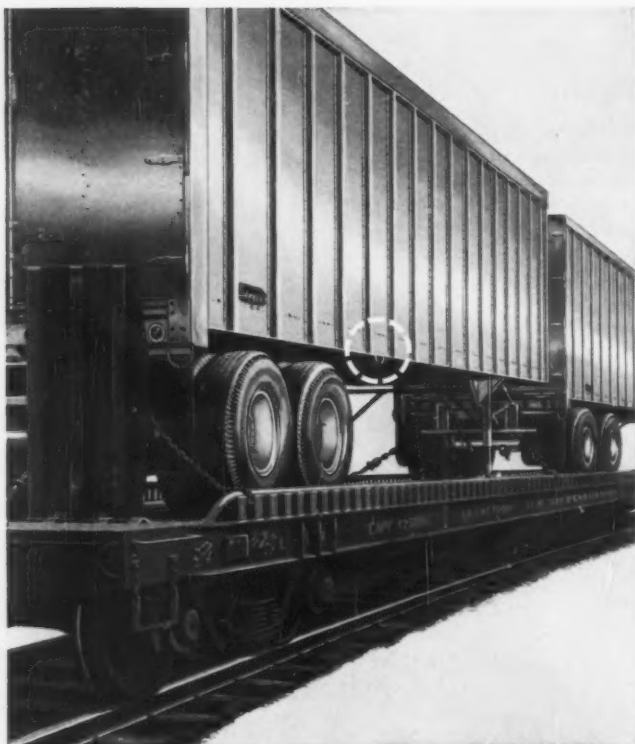


THE

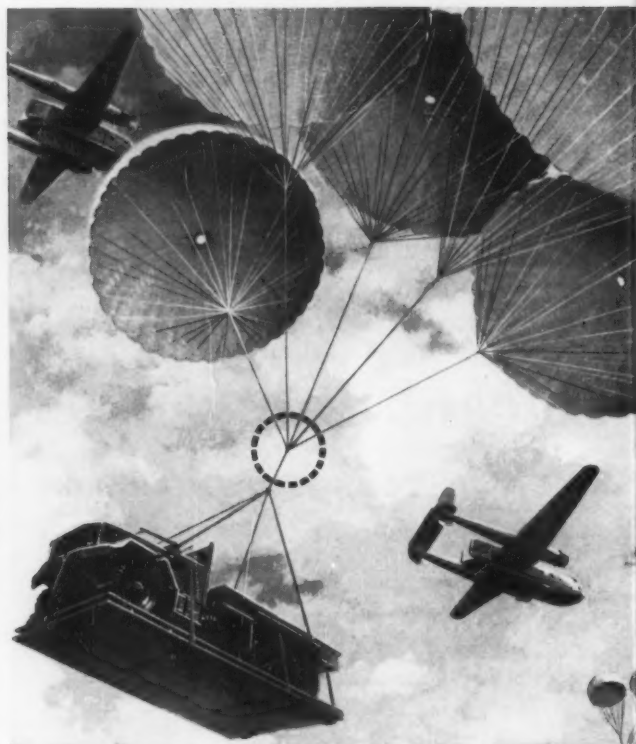
YOUNGSTOWN

SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Tool Steel, Youngstown, Ohio



"PIGGY-BACK" TRAILERS. The vital "backbone" of these "piggy-back" trailer bodies—the sturdy aluminum sideposts, top rails, and bottom rails—are Flynn extruded shapes. Like the ribs in an umbrella, they give strength and rigidity to the trailer shell.



PARACHUTE RELEASES. The mechanical "helping hand" that automatically opens the cover of these parachutes is a fascinating, explosive-powered device of tight tolerances, housed within a hollow aluminum extrusion. It was engineered for production by Ordnance Specialties, Inc.



*Read what others have
done...then*

**Count the places
in your product where
Flynn aluminum extrusions
can save you money**



ROCKET HANGER BEAMS. The critical aluminum hanger beams supporting the Aero 7-D rocket launchers are Flynn extrusions. More than 50,000 of these parts have been delivered for use on Navy jet fighters such as the Banshee and Cutlass—parts that carry the payload that carry the punch.



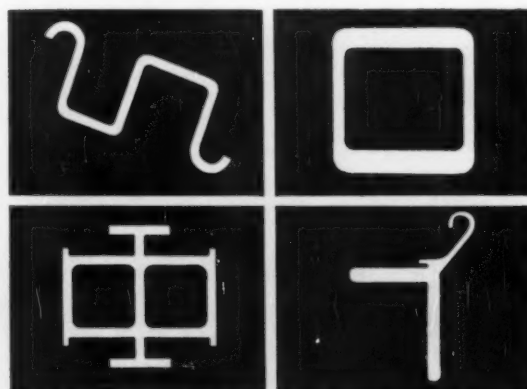
THE GEODESIC DOME. Flynn extrusions form the framework for "Geodesic Domes", used by U.S. Marine Corps. These new, versatile, lightweight buildings (originally designed by R. Buckminster Fuller) were fabricated by Magnesium Products of Milwaukee, Inc.



Expect to be surprised at some of the places Michael Flynn aluminum extrusions are doing an old job better—or making a new product possible. The contract may call for a simple, but very vital, hanger beam for an Air Force jet rocket launcher. Or, as in the case of the Geodesic Dome, Flynn extrusions may serve as the framework for an entire building.

How long since you've looked for new ways, better ways, to improve your product? Might be that Flynn extrusions could do just that for you. They're rust-proof, strong, longer-lasting, and weigh substantially less than most comparable components. They usually *cost less*, too.

There's probably a place in your product for a Flynn extrusion. Like to find out? Write on your letterhead for help, advice, and ideas from Flynn. All free, of course. Do it today, and you'll be glad you did, tomorrow.



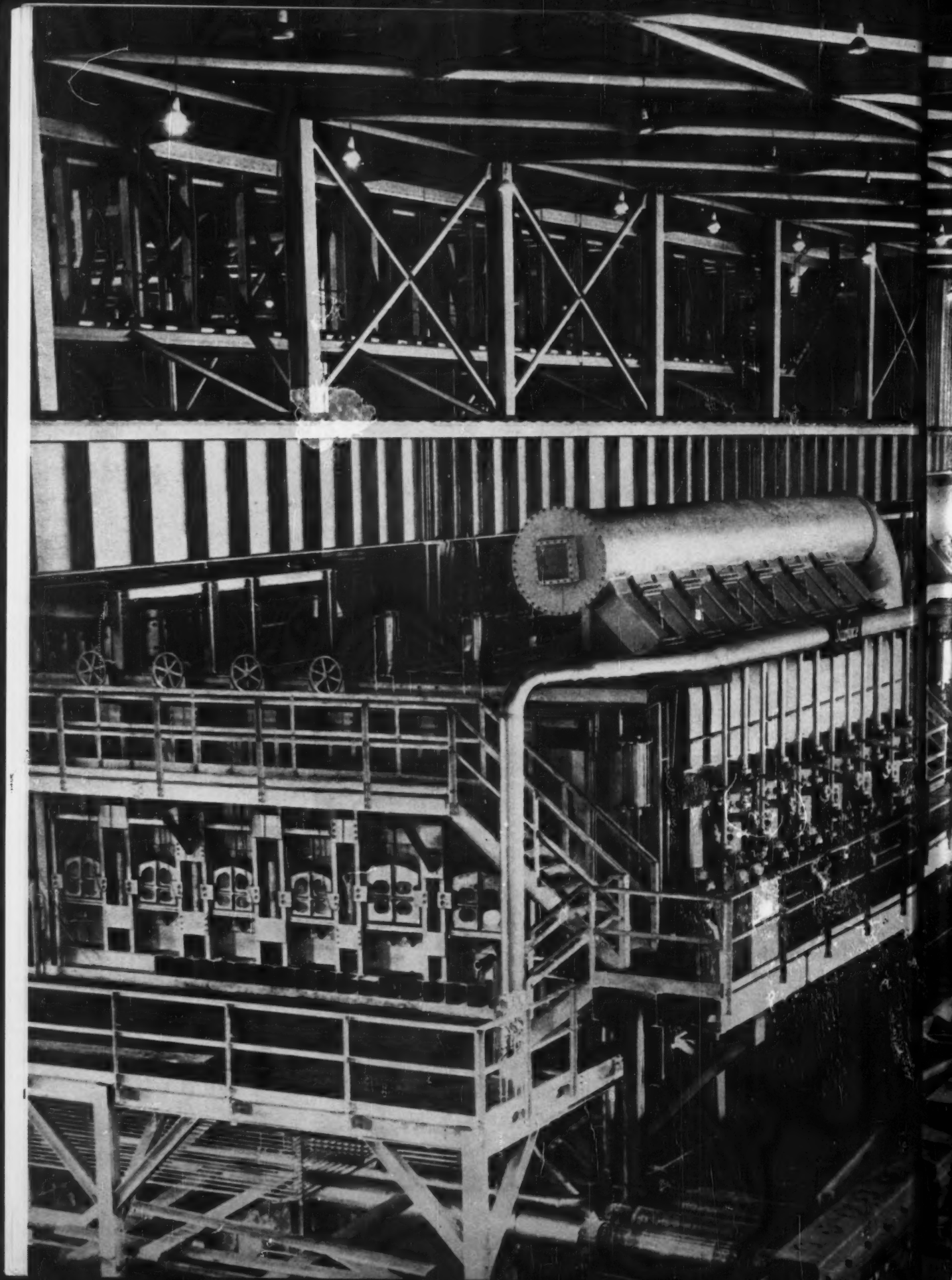
MICHAEL FLYNN MANUFACTURING COMPANY

Aluminum Division

Main Office & Plant:
700 EAST GODFREY AVE., PHILADELPHIA 24, PA. Tel.: Fidelity 2-5500
Sales Offices:
51 EAST 42ND STREET, NEW YORK 17, N.Y. Tel.: YUkon 6-6020
937 RADCLIFFE ROAD, TOWSON, MD. Tel.: VAlley 3-2090
672 SOUTH LAFAYETTE PARK PLACE, LOS ANGELES 57, CALIF. Tel.: DUnkirk 7-3183
4232 HERSEL STREET, DALLAS 19, TEXAS. Tel.: LAkeside 6-8757

FLYNN

ALUMINUM



200 TONS AN HOUR CONTINUOUSLY

200 tons of steel slabs are heated to rolling temperature every hour, continuously, in each of these Surface monsters—world's largest slab furnaces.

No other furnace today can list all of these features:

- 1 Cantilever skid supports* permitting unobstructed combustion space for underfiring.
- 2 Furnace lines and burner design which provide high heat input from the moment the slab enters the furnace.
- 3 Built-in control* to prevent intermingling of gases from upper and bottom zones, providing better control of heat application, and preventing overheated slab end.
- 4 Anticipatory control which reduces temperature head when rate of slab discharge decreases.
- 5 Air preheat up to 1100°F.
- 6 Television signal to pusher pulpit, informing operator of the exact position of the leading slab.

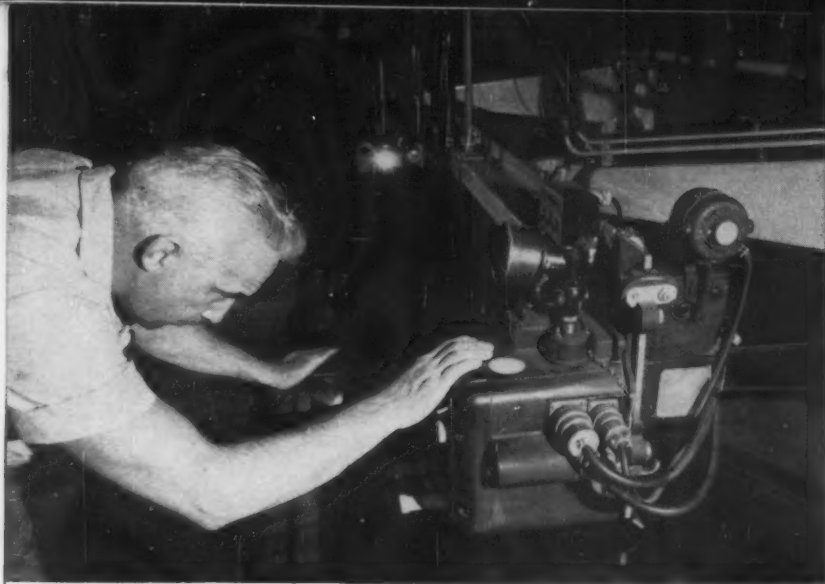
This is another demonstration that, at Surface, unconventional thinking and conventional experience are a productive team for the steel industry. Surface Combustion Corporation, 2402 Dorr St., Toledo 1, Ohio.

*patents pending

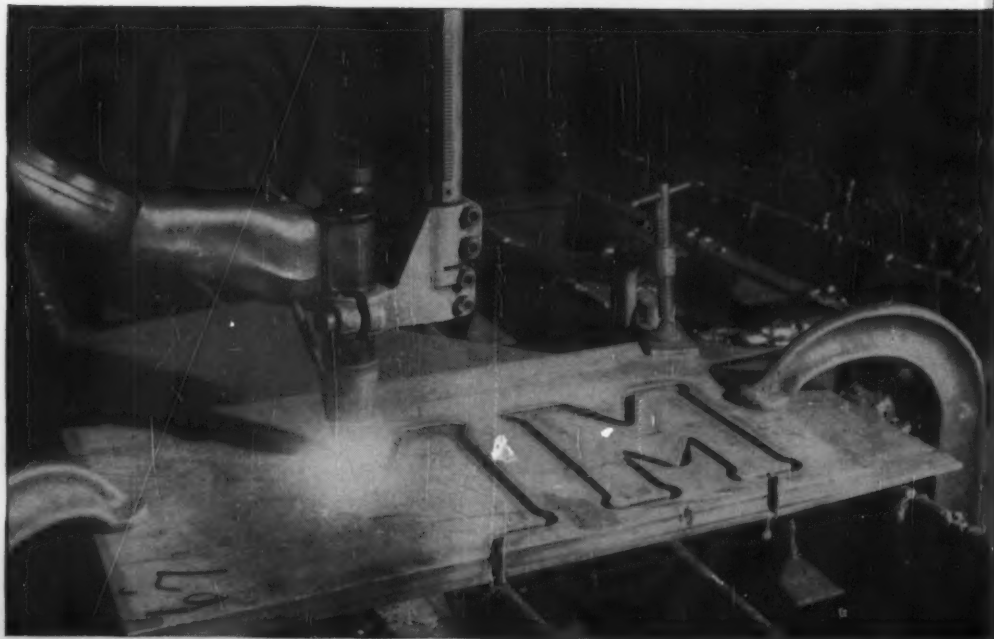
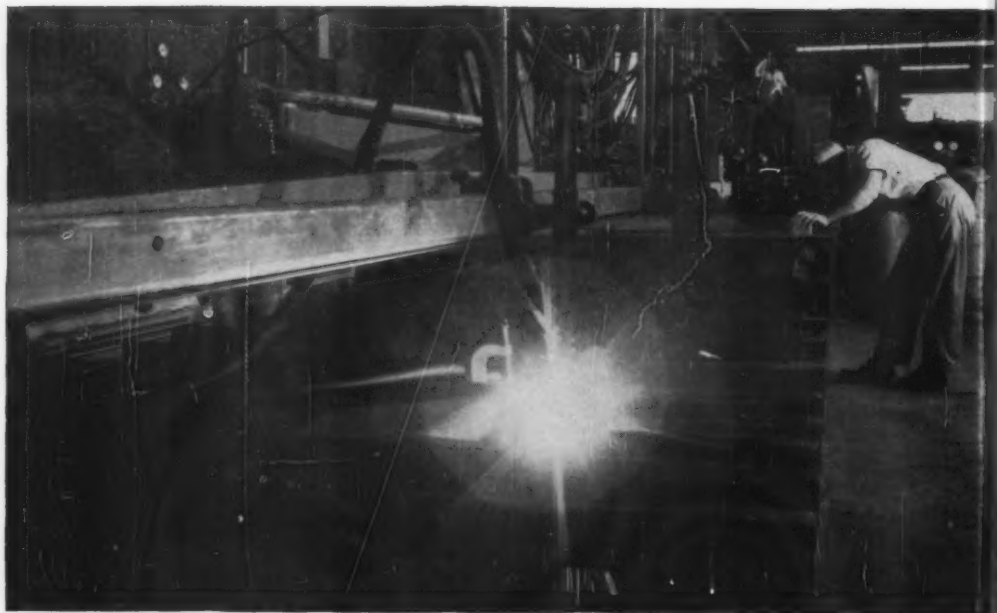
Surface

wherever heat is used in industry

Associated Companies: British Furnaces, Ltd., Chesterfield
• Stahl & Atkinson, Ltd., London • Stahl & Anstetten, Berlin
• S. A. Belp, Stein & Neubert, Düsseldorf, U.S.A. •
• S. A. Pecci Slab, Garmes • Ghysal Pecci Slab, Krefeld, U.S.A.
• Danks • Tenby Slab, Manchester, U.S.A. • Tenby Slab, U.S.A.



**NOW IT'S
TO CUT**



EASIER THAN EVER HEAVY STAINLESS PLATES

New technique cuts irregular shapes
from 2" Stainless Steel plates without post-machining or annealing

TODAY, when a designer knows that a particular part should be made from Stainless Steel, he doesn't have to settle for a substitute material because of fabrication difficulties. Fabricators aren't stymied by Stainless Steel. They've learned that this miracle metal isn't difficult to fabricate—it's just different—and they've developed new equipment and methods to fabricate it.

A good example is the gas-shielded arc cutter used by **Morrison Steel Company**, New Brunswick, New Jersey, a leading Steel Service Center selling USS Stainless Steels. The gas mixture shields the Stainless and protects the kerf wall from oxidation. The combined heat of the arc and force of the gas stream make a smooth cut that seldom needs post-machining or annealing to attain a smooth edge and good microstructure.

By assuring close tolerances and eliminating contamination, this type of cutting opens new avenues to design engineers and cost-conscious production men. And most remarkable of all—virtually any irregular shape can be cut from Stainless Steel plates *up to 2" thick*.

Developments such as this prove the adage that "service sells steel," a philosophy firmly held by Steel Service Centers selling USS Stainless Steel. To be assured of service-tested quality when you order Stainless from a Steel Service Center, specify USS Stainless Steel.

USS is a registered trademark

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tube—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company



United States Steel

ALLOYS ALONE ARE NOT ENOUGH!

The development of new and better alloys or improvements in making and using them is only part of the job at ELECTROMET. The service you get with the alloys you buy is equally important. Here's where ELECTROMET is really unique. Just read the following and see if you're getting the *most* out of your present alloy purchasing program.

FOR INSTANCE...ARE YOU GETTING



THIS? The combined knowledge of more than 300 skilled engineers and scientists whose experience with advanced technology can help you with your most perplexing alloy-using problems.



THIS? The experience of sales engineers skilled in the most efficient use of alloys... ready to quickly call in ELECTROMET specialists on any technical problem that may come up.



THIS? Assurance of top quality products *every* time. Selection from more than 100 different alloys. Modern, efficient plants convenient to steelmaking centers. Equipment developments that *raise quality standards*. make economies possible.



THIS? Assurance of continuing supplies and fast delivery service from convenient, well-stocked plants and warehouses. The most important alloys are stocked by ELECTROMET near every major metal-producing center in the nation.



ELECTROMET engineers bring you on-the-job assistance in the use of alloys. Their experience backed by the entire ELECTROMET organization is your assurance of satisfaction. We invite you to call us.

THIS? Information about the latest developments in ferro-alloys, metals, and metal compounds and their contributions to industrial progress and better living. Shown here is the second issue of ELECTROMET's new 32-page quarterly magazine. Write for your free copy today.



The terms "Electromet" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

THE IRON AGE, January 1, 1959

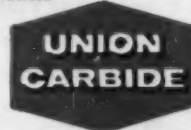
ELECTRO METALLURGICAL COMPANY

*Division of
Union Carbide Corporation*

30 East 42nd Street New York 17, N. Y.

*In Canada: Electro Metallurgical Company,
Division of Union Carbide Canada Limited,
Toronto*

Electromet
FERRO-ALLOYS AND METALS





only a GRAY

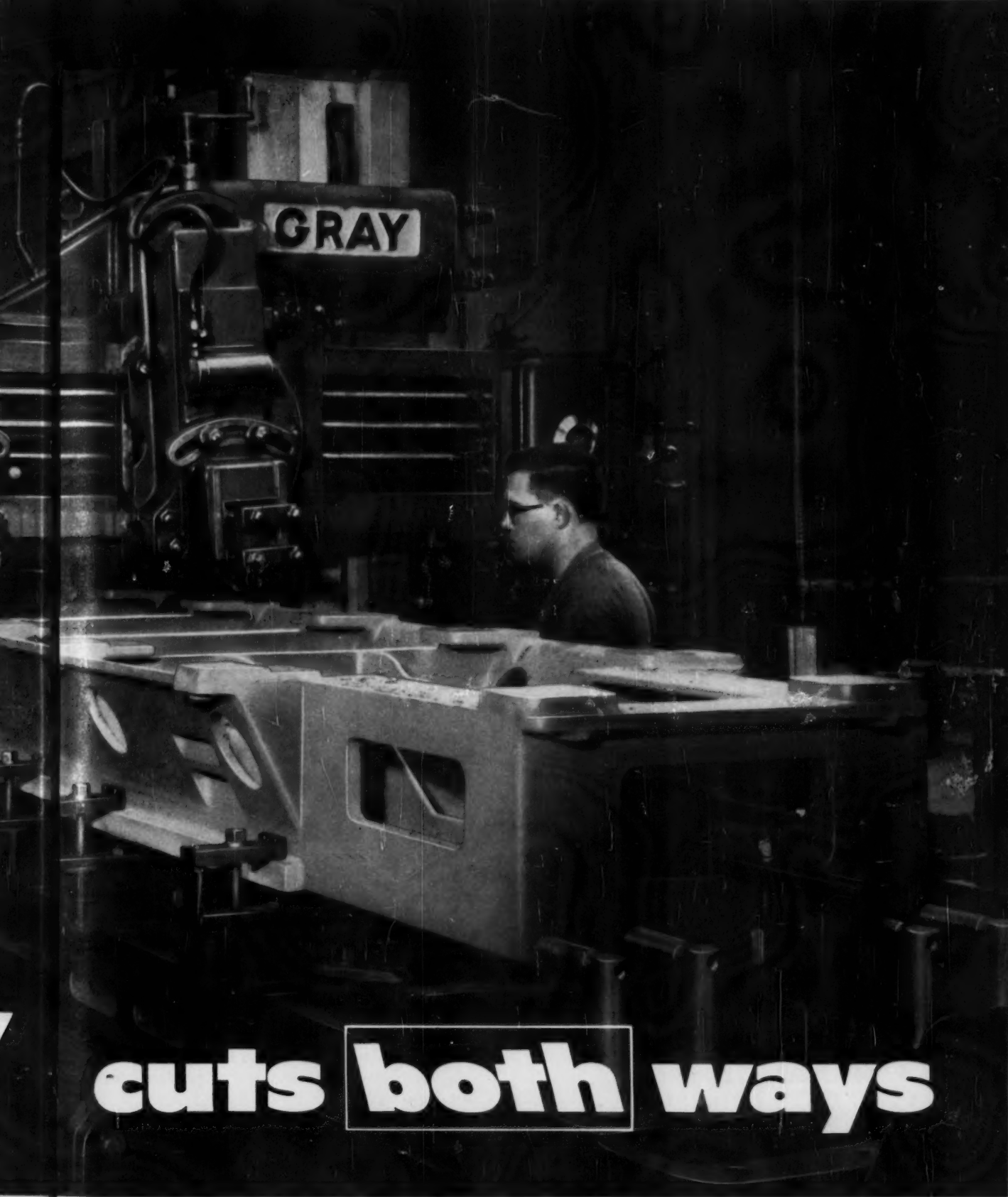
Cuts going—cuts coming . . . that's "double-cutting" with the GRAY Universal Planer. At Textile Machine Works, Reading, Pennsylvania, this new GRAY is pictured double-cut carbide planing a Tricot Machine Base. Former floor to floor time of 62 hours has been slashed to 12 hours by the enormous productive potential of the new GRAY that cuts both ways.

The G. A. GRAY Co., Cincinnati, Ohio.



heavy-duty planing

The Gray Universal is the world's most powerful planer available for conventional planing. Its rigidity and speed are ideally suited for modern carbide cutting.



cuts both ways



double-cutting

The flick of a lever, the touch of a button permits double-cutting. Elimination of the idle stroke insures the world's most efficient flat surface machining. Only simple carbide tools are required.



triple-cutting

Rough and rough-finish plane at the same time. Rough by double-cut planing and simultaneously rough-finish with a single point tool. Then finish plane without a tool change.

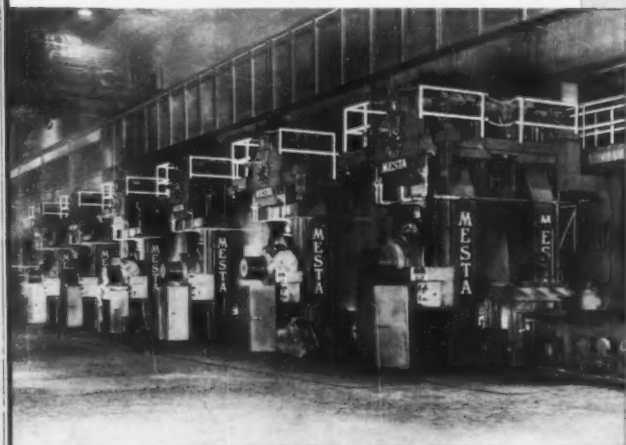


cross planing

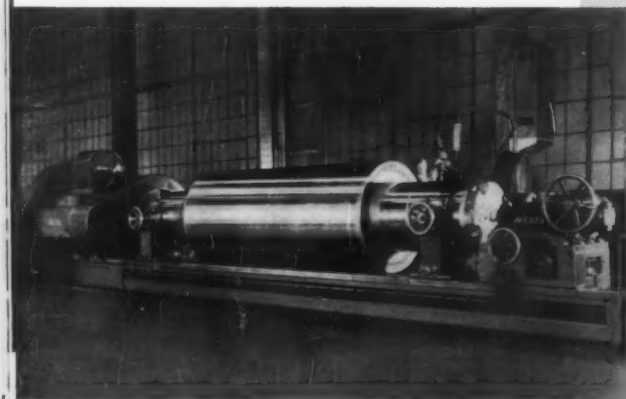
Eliminates extra settings by cross planing the occasional keyways, chamfered corners, and other troublesome small cross surfaces that formerly added hours to your set-up time.



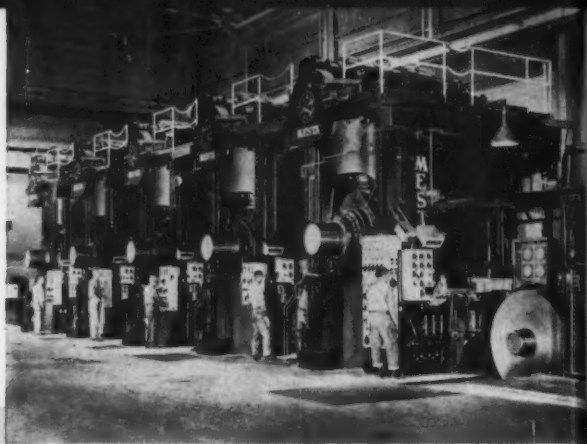
Universal Reversing Roughing Mill and Vertical Edging Mill—Automatically Controlled—on a MESTA 44" Hot Strip Mill



Six Finishing Stands with Three Vertical Edgers on a MESTA 44" Four-High Hot Strip Mill



MESTA 60" Travelling Wheel Type Heavy Duty Roll Grinder Finishing a Backing-Up Roll



MESTA 48" Four-High Five-Stand Tandem Cold Mill Rolling Strip Steel for Tin Plate in Coils

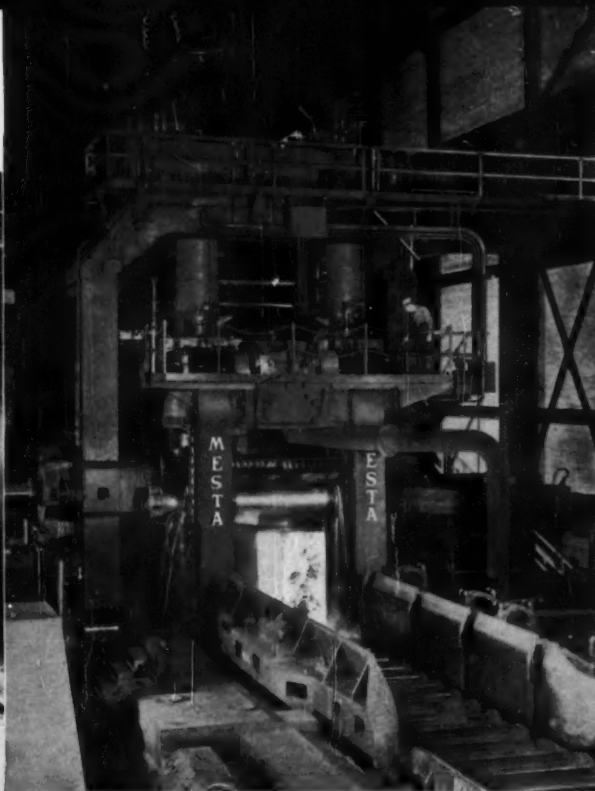
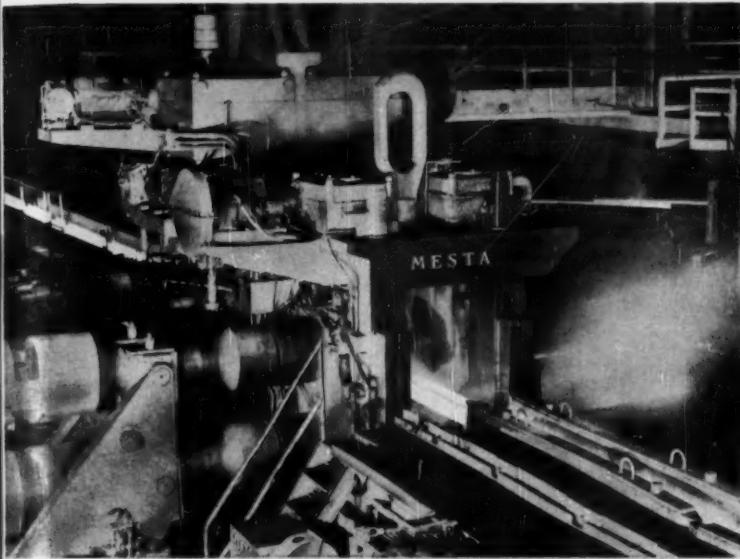


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OF COMPLETE STEEL PLANTS**

In this, the 200th Anniversary of Pittsburgh, Mesta Machine Company is proud of its more than 60 years as a leader in the development, design, and manufacture of rolling mills and auxiliary processing equipment, forging presses, and heavy duty machinery for complete steel and aluminum plants. The name MESTA is a symbol of quality to these progressive industries here, and in other countries, in their goals to produce more and better products.

MESTA MACHINE COMPANY
PITTSBURGH, PENNSYLVANIA

MESTA Universal Structural Mill Rolling Wide Flange Beams
on the 44" Universal Stand and the 34" Edging Stand



Rolling 20 Ton Ingots into Slabs
on a MESTA 45" x 90" Universal
Reversing Slabbing Mill

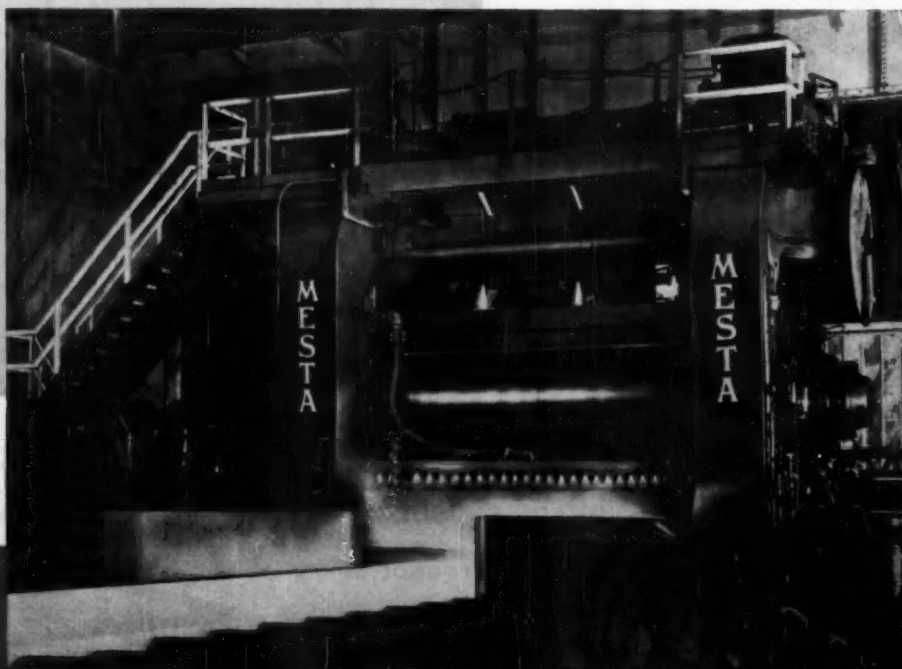
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1758 — 1958

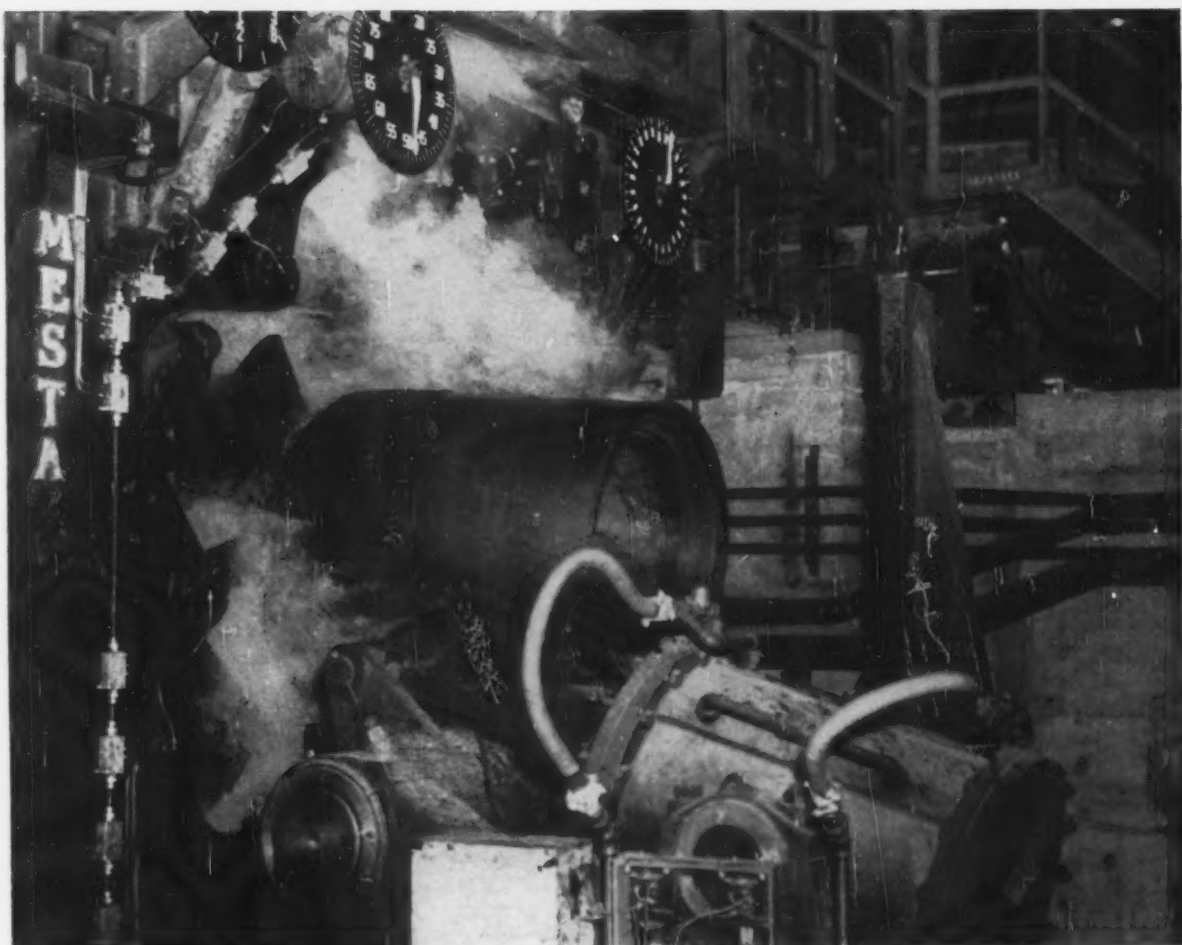


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MESTA 160" Four-High
Reversing Plate Mill





NOW... Houghto-Safe Fluid protects this down-coiler. LAST YEAR... it would have prevented a \$50,000 fire!

It happened in a hot strip mill, in Pennsylvania. A break in the hydraulic lines of one down-coiler—and oil sprayed against a hot coil. Flames instantly swept the department. Equipment and wiring were ruined, but fortunately no one was injured. Damage: \$50,000 and 8 days' loss of production.

Since the fire, Houghto-Safe has been specified for all fire-danger spots throughout this mill. And, although similar line breaks have since happened, the only result was smoke and steam.

Why risk a disastrous fire in your mill? Hydraulic line leaks do happen. For a relatively small investment in Houghto-Safe fluid, you may save your plant thousands of dollars damage, and possible loss of life.

Why not join the hundreds of industrial plants which have installed over 2 million gallons of Houghto-Safe in the past five years? Write today for complete information on Houghto-Safe from: E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

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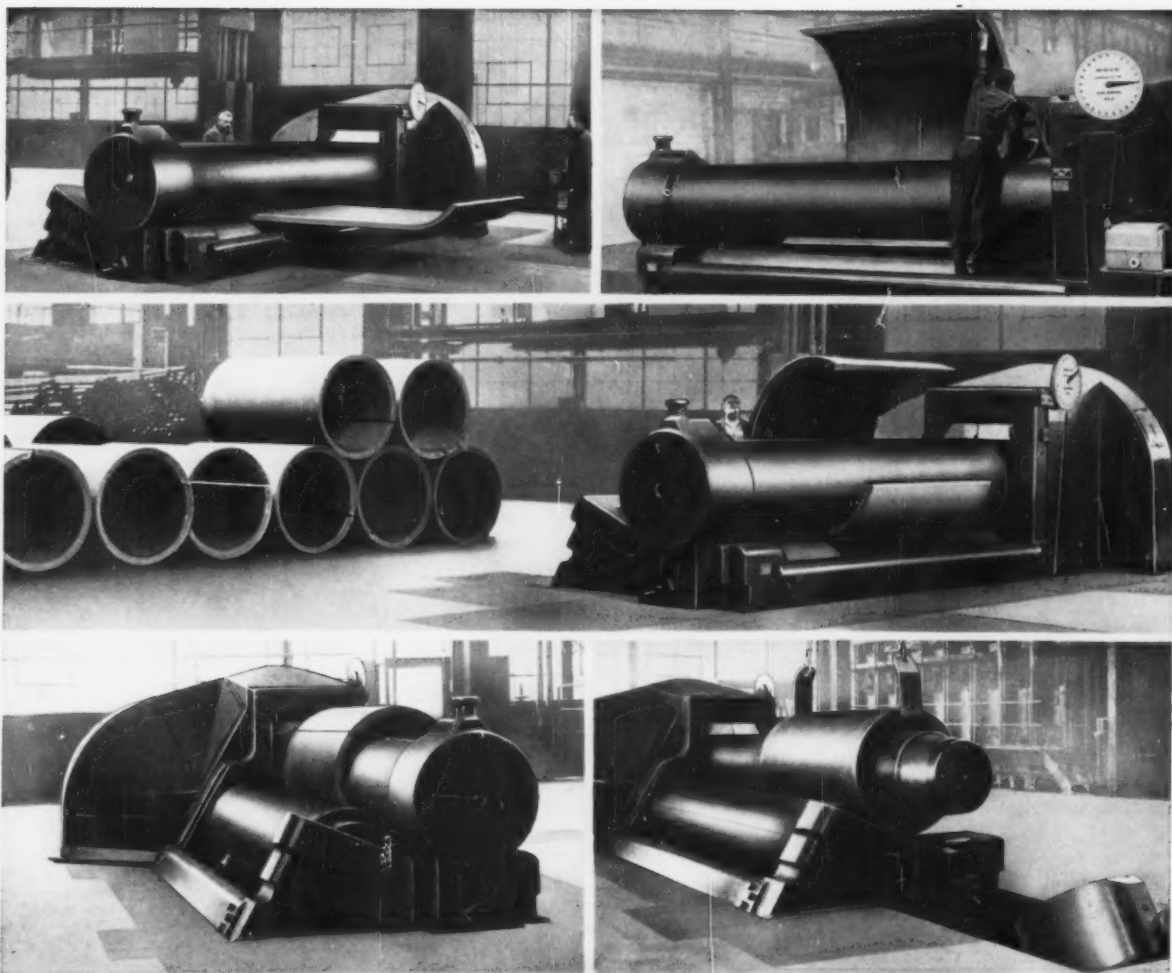


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**Rolling A-212 Plates Cold
3" Thick to 38" I.D.**

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There is now no doubt that radio contact can be maintained between the Earth and our moon pioneers. The friendly voice from home will come through clear and comforting, thanks partly to improvements in electrical insulations being made today by CDF.

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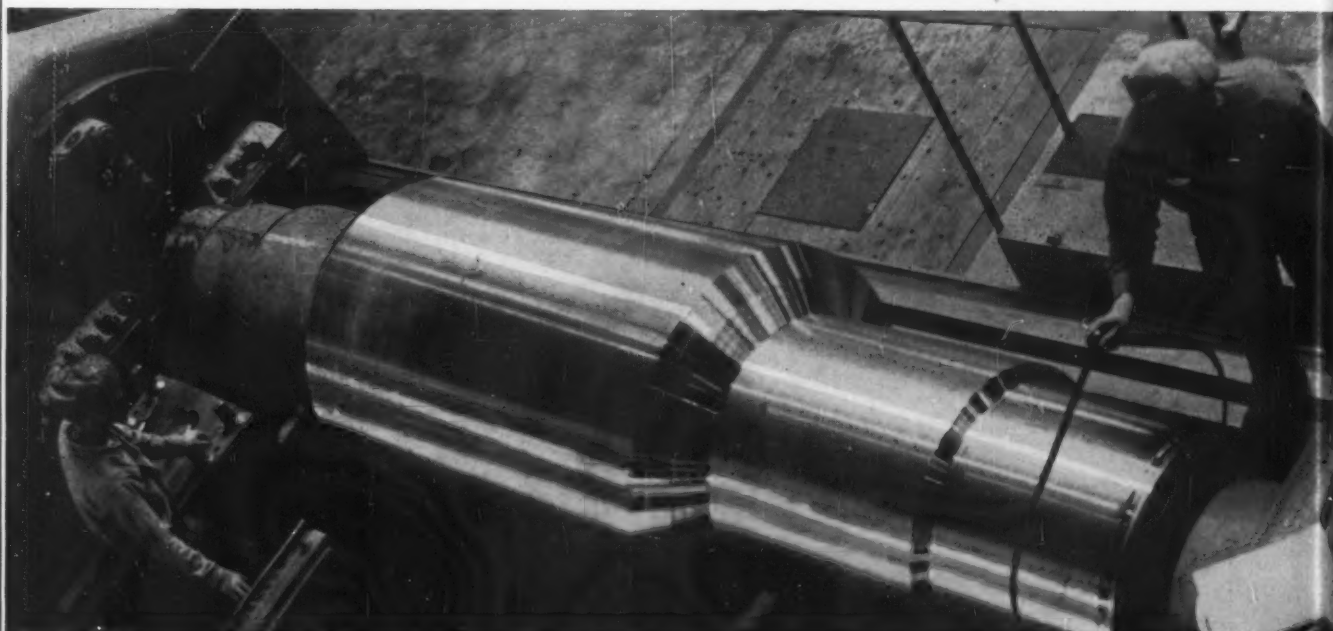
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this Waldrich giant



swings a 90-ton roll



—cuts rough turning time 75%

You're looking at the business end of a Waldrich-Siegen Roll Turning Lathe, built to turn a workpiece as long as 30 ft., as fat as 63 in. in diameter, and as heavy as 90 tons!

Right now, you're seeing it in action at the Ohio Steel Foundry Co., Lima, Ohio, biting into a 57-ton, 98-in. long roll, with a 53-in. O.D. In just three passes, its hungry cutters will shear 15 inches of steel off this diameter. Before it's through, 12 tons of turnings will come off.

This job used to take 68 hours at Ohio Steel Foundry. The husky Waldrich breezes through it in just 16½ hours flat.

It takes plenty of muscle to peel through so much

steel and the Waldrich has it, delivering 250 horsepower to the spindle. Speed is set at the selector wheel, feed at each of the two independent carriages.

And here's an interesting economy note: chips from the Waldrich lathe are large enough to be remelted, unlike finer chips from other lathes that oxidize too quickly. Ohio Steel Foundry collects a bonus of \$15 on every ton salvaged.

Three different size Waldrich lathes are now in operation at this plant, turning workpieces with maximum O.D.'s of 36", 48" and 63". Maybe one of these sizes is the answer to your roll turning needs. It's easy to find out. Write today for complete details on these heavy producers.

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watch these giant workers chip away costs!

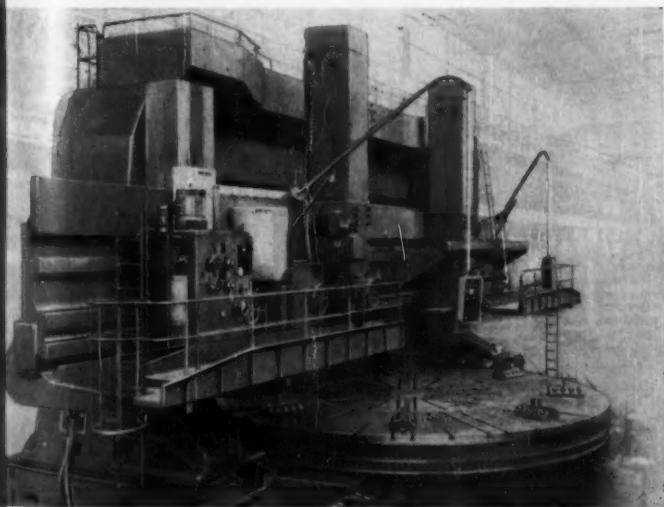
This 8½ in. SCHIESS model BF horizontal boring and milling machine...

now completely redesigned with many innovations. Here are a few...

Two individual drives—gear-drive for roughing, belt-drive for finishing. Belt-drive particularly suited to high-speed machining with carbide tools. New tool clamping device—does away with draw keys, hammers, drifts and binding screws. All spindle-slide movements controlled from easily accessible operating platform (or from pendant station or portable control panel, if desired). Special main-drive belt requires no readjusting. Column, spindle-slide and boring spindle may be adjusted at rapid traverse.

Spindle diameters, 6-5/16" to 8-7/8". Maximum diameter bored, 59"—faced, 79".

It takes Europe's largest builder of heavy machine tools, Schiess, to turn out giants like these. Parts and service as close as Pittsburgh. And an American Schiess engineer will be happy to help you size up these heavy producers for your heavy production needs. Write for catalogs and complete specifications on all Schiess BF and K models.



This 32 ft. SCHIESS model GK vertical boring and turning mill...

Look at all these new features of the most modern vertical boring mill of its type: Two ram heads on the rail, one of which is tracer-controlled. One milling head on the rail which can be parked on the left side rail extension. Dual tables—one 15' table on the inside, a 32' table on the outside. Each table has independent drive, or both tables can be used together and synchronized as one. Table equipped with indexing device to be used for indexing layout work. Machine will swing a maximum diameter of 40'. Rapid traverse motions with pushbutton control of changeover from feed motion to independent power traverse. Electro-mechanical locking of cross-rail to columns. Fingertip speed control—counter-balanced cross-rail and side-head—completely enclosed swiveling octagon rams—pendant control—automatic lubrication.

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DRIVE MEETS
HEAVIEST LOAD
REQUIREMENTS**

Poly-V®
Drive Specifications
for 2500 Ton
Erie Forging Press:

Poly-V* Belt "M":
301" P.L. x 9" wide,
24 ribs.
Driver Sheave: 17"
P.D. 68" Diameter
Flywheel.
100 Horsepower.

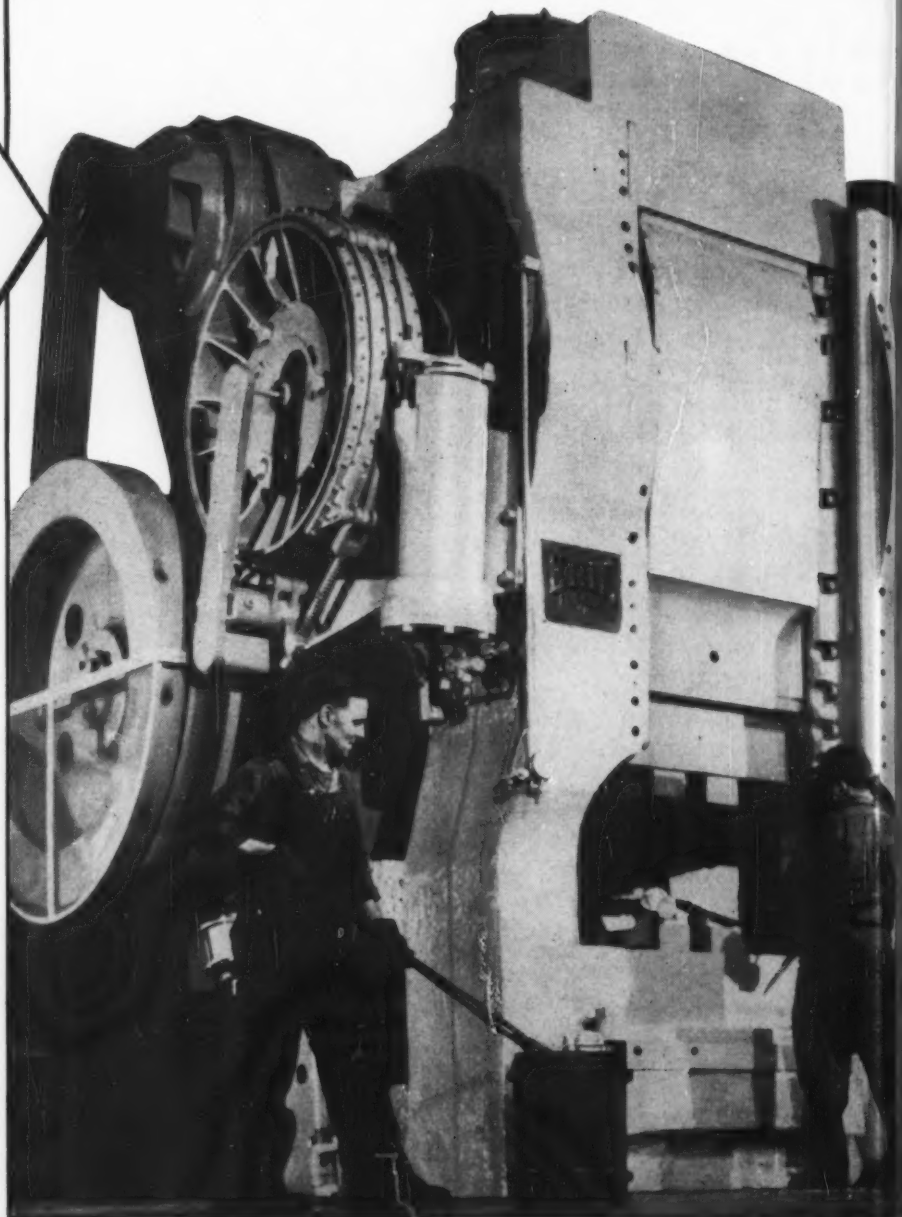


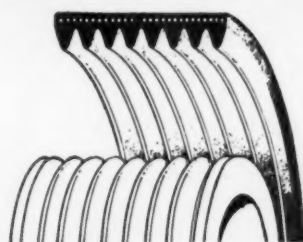
Photo Courtesy Erie Foundry Co.

R/M POLY-V* DRIVE...MORE USE PER DOLLAR

Compact Poly-V Drive delivers power to spare for this huge 2500 ton forging press, newly introduced to industry by Erie Foundry Company. R/M's patented drive design provides the higher horsepower capacity . . . more power per inch of drive width than ever before possible! Because it employs a single, endless V-ribbed belt running on sheaves specially designed to mate precisely with the belt ribs, Poly-V delivers up to 50% more power than ordinary V-drives of equal width . . . or equal power in as little as $\frac{2}{3}$ the width. Poly-V Drives have

narrower sheaves . . . less shaft overhang . . . less drive weight to meet *every* heavy duty application.

Poly-V's single unit belt design eliminates multiple-belt "length matching" problems, too. Belt speed ratio and belt position remain constant from no load to full load . . . assure smoother, cooler running—less wear on belts *and* sheaves! Just two belt cross sections meet every heavy duty drive requirement. Ask an R/M representative to help determine the R/M Poly-V* Drive specifications for your power driven equipment. Or write for Bulletin #M141.



POLY-V GIVES GREATER POWER CAPACITY because it has *twice* the contact area with *half* the face pressure.

POLY-V®

V-BELTS

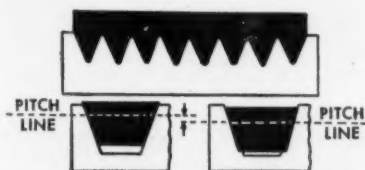
COMPARE: Measure the two bold lines to see the greater contact area of Poly-V* belt in the sheave.

AND POLY-V* has uninterrupted strength member of new high strength synthetic cord. Poly-V* is a single unit with even, uniform pull.

POLY-V®

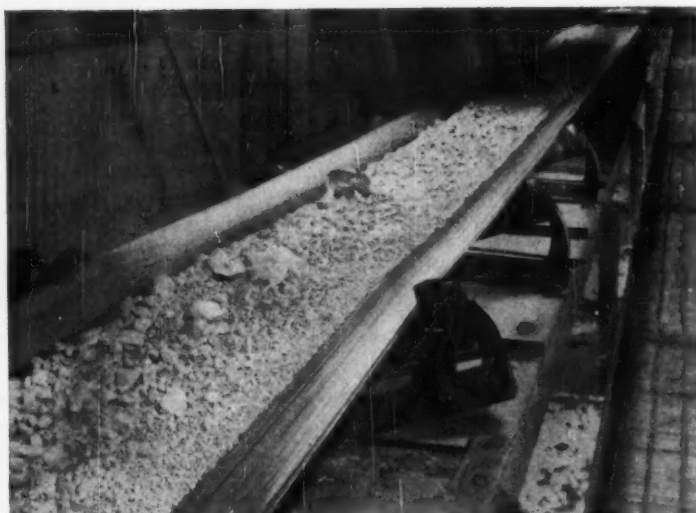


POLY-V* maintains constant pitch diameter under all loads. Speed ratio is unchanged. Belt position remains constant from no load to full load.



**MORE POWER in SAME SPACE
or
EQUAL POWER in LESS SPACE**

*Poly-V is a registered Raybestos-Manhattan trademark.



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ALLFLEX HOSE IS STRONG AND FLEXIBLE

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RM 517

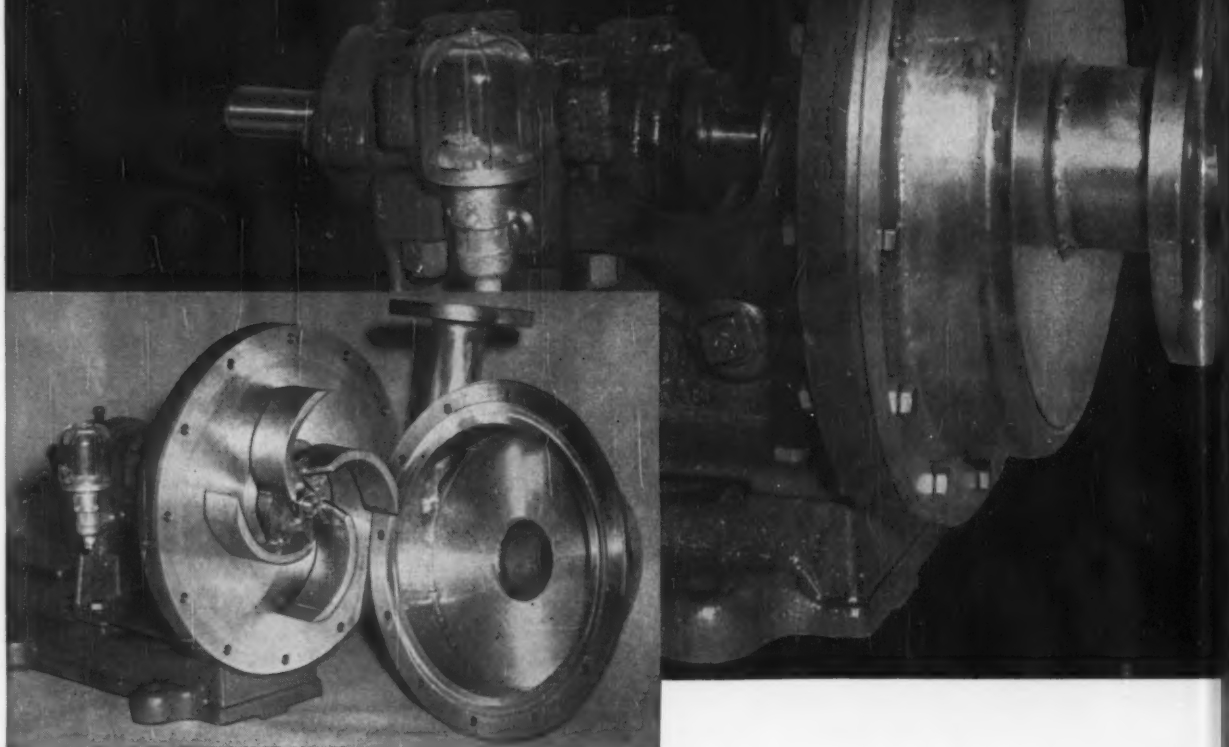
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Centrifugal pump fabricated economically and without difficulty from **REPUBLIC TITANIUM**



Mission Manufacturing Company, Houston, Texas, has added a worthy companion to its full line of centrifugal pumps for corrosive and abrasive applications. Shielded-arc welding techniques now permit the use of titanium in its maximum corrosion-resistant form for particularly severe pumping applications.

The pump shown above was fabricated by shaping, welding in an inert gas atmosphere, and machining. It is being used by a leading chemical company to handle ferric chloride at temperatures of about 212°F. The finished pump, incorporating the exclusive Mission Concentric Casing, contains 34 pounds of Republic Titanium.

Performance ratings are essentially similar to those obtained for cast iron or corrosion-resistant alloys.

Fewer pump sizes are required because the flat characteristics of Mission's impeller design provide a wide operating range and sustained efficiencies.

The entire fabricating operation was performed without difficulty and with little change in procedure as compared to other materials of construction.

Does this application of Republic Titanium spark an idea for your product that needs to be strong, lightweight, and corrosion-resistant? Republic Metallurgists and Machining Specialists will help you apply titanium's advantages now.

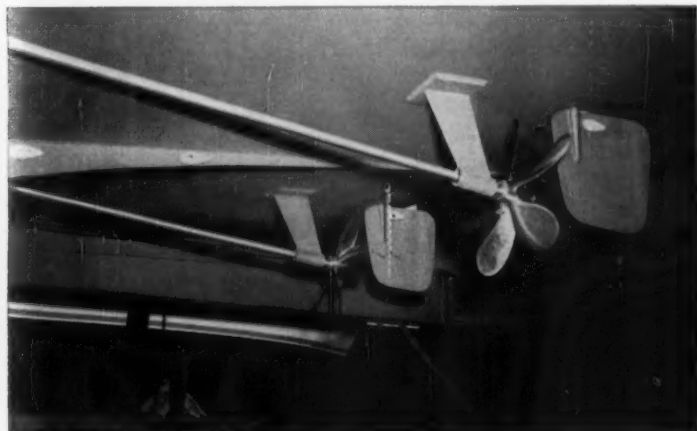
Republic produces commercially pure titanium and titanium alloys in ingots, billets, hot rolled and cold finished bars, plates, sheets, and strip. Mail the coupon for more information on these titanium forms, or for metallurgical and machining assistance.



SAVINGS IN MACHINING AND PRODUCTION COSTS of Ace Screw Extractors are obtained by the Henry L. Hanson Company with the help of Republic Cold Drawn Leaded Alloy Steels. Rolling of the extractor spirals formerly required several passes, each followed by an annealing operation. Now, with Republic Leaded Alloy, separate passes can be made deeper, reducing the total number of steps. And, because cold drawing improves the machinability of any given analysis, savings in machining costs are secured. Republic Alloys, Types 4140 and 4150, also provide a high degree of hardness and toughness. These properties in combination with scientific heat treating make the extractors practically unbreakable. Get all the facts on the advantages of Republic Cold Finished Alloy Steels. Mail the coupon today.



LOWER COSTS, IMPROVE QUALITY, INCREASE PRODUCTION with Republic Cold Drawn Special Sections. Because they are formed to the predominating cross-section of the part, Republic Special Sections eliminate or greatly reduce required machining. Results are faster output and lower cost. Also, since cold drawing improves the physical properties of any given analysis, completed parts are stronger and longer wearing. Other advantages may include improved appearance and simplified design. Send coupon for complete facts.



IMPROVED PRODUCT PERFORMANCE is reported by Roamer Steel Boats, Division of Chris-Craft Corporation, since switching to Republic Cold Finished Stainless Steel Bars. Vibration, a mechanical problem caused by out-of-true drive shafts, has been reduced to a minimum by Roamer through standardization of stainless shafts for their line of pleasure cruisers. The shafts are machined from uniformly straight Republic Cold Finished Stainless Steel Bars, Type 304. The bars meet Roamer's strict, maximum tolerance requirement of .006" runout in 72" of shafting. Stainless steel shafts also provide high strength and outstanding corrosion resistance. Republic specialists will help you use Cold Finished Stainless Steel Bars to best advantage. Mail coupon for more information.

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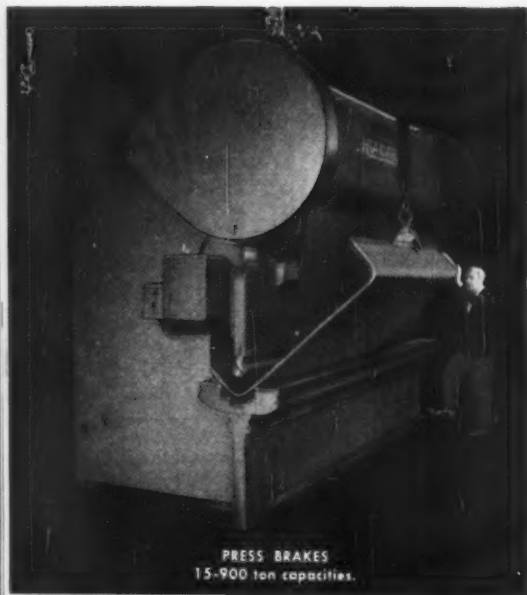
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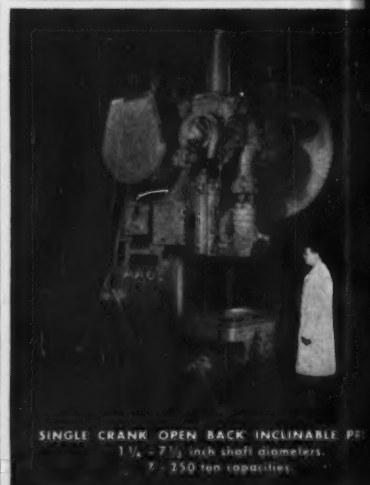
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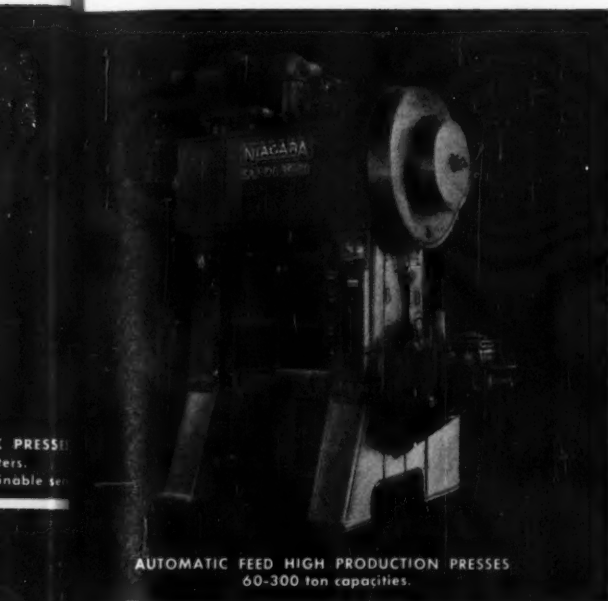


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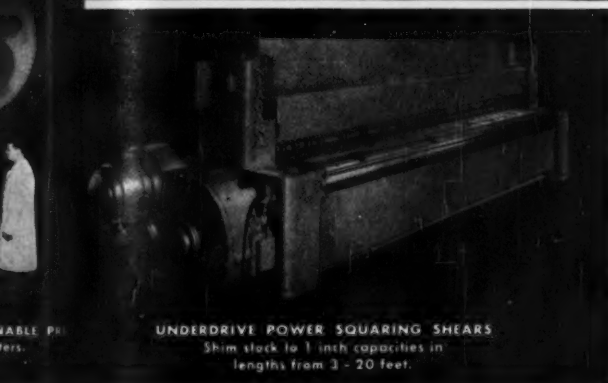


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Shim stock to 1 inch capacities in
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City: _____ State: _____

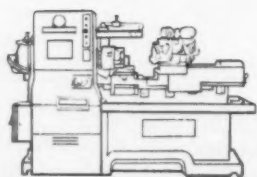
"CUT Machining Time 45% and INCREASED PRODUCTION 45%"

*ALL NEW 3E-15
Automatic Turret Lathe*

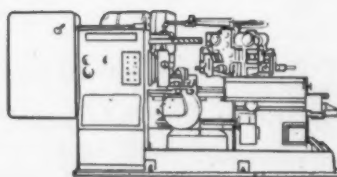


FROM THE COMPACT, HIGH-SPEED 3-U, with 6" chuck

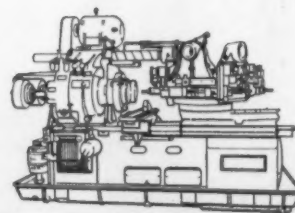
3-U SPEED-FLEX



4-U AUTOMATIC



5-D POWER-FLEX



POTTER & JOHNSTON AUTOMATICS ARE AVAILABLE IN A COMPLETE

This Statement comes from a manufacturer who recently replaced his old, inefficient hand operated machines with new Potter & Johnston Automatic Turret Lathes. Reports from some of the many other manufacturers who have replaced with P&J include statements like these: "We reduced machine-hours 71%" . . . "Our company eliminated 4 machines and reduced operating costs" . . . "P&J Machines helped us save 66% in labor costs" . . . "We cut machining time in half and eliminated inaccuracies!" And remember — this is the kind of cost-cutting, time-saving performance *you* can expect in your plant when you replace with Potter & Johnston Automatics!

P&J Automatics deliver profit-building performance like this, because they incorporate every design advance and construction detail that can

help you produce faster at lower cost. For example, the new 3E-15 shown here offers you: Extra power and rigidity for faster, more accurate metal removal . . . selector-switch cross slide control, independent turret indexing drive, extra-large control drum and 6-face turret for faster, easier set-up and maximum tooling flexibility.

Tape Control. Where the ultimate in productivity and flexibility is desired — P&J Automatics can now be equipped with Tape Control for all machine motions. This important advance in industrial production methods greatly reduces setup time and insures optimum programming and cycling with minimum floor-to-floor time. All your jobs can be handled with greater efficiency . . . the cost-cutting advantages of fully automatic operation are made available for very short as well as long production runs.



Send Now for the Facts . . .

that will prove how P&J Automatics can help you speed production, improve work quality and reduce costs. Write for your free copies of P&J Case-History Reports . . . or ask to have a Representative visit your plant and analyze your requirements. There's no obligation, of course. Potter & Johnston Company, Pawtucket, Rhode Island.



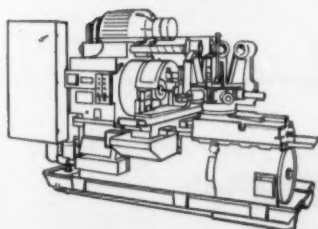
POTTER & JOHNSTON

SUBSIDIARY OF PRATT & WHITNEY COMPANY, INC.

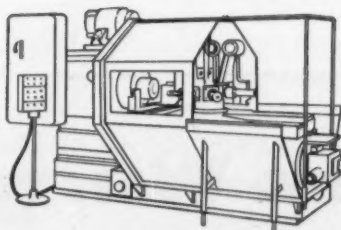
PRECISION PRODUCTION TOOLING SINCE 1898

... TO THE GIANT 10-U, with chuck sizes to 42"

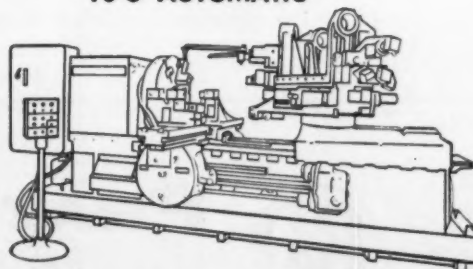
6-D AUTOMATIC



8-U AUTOMATIC



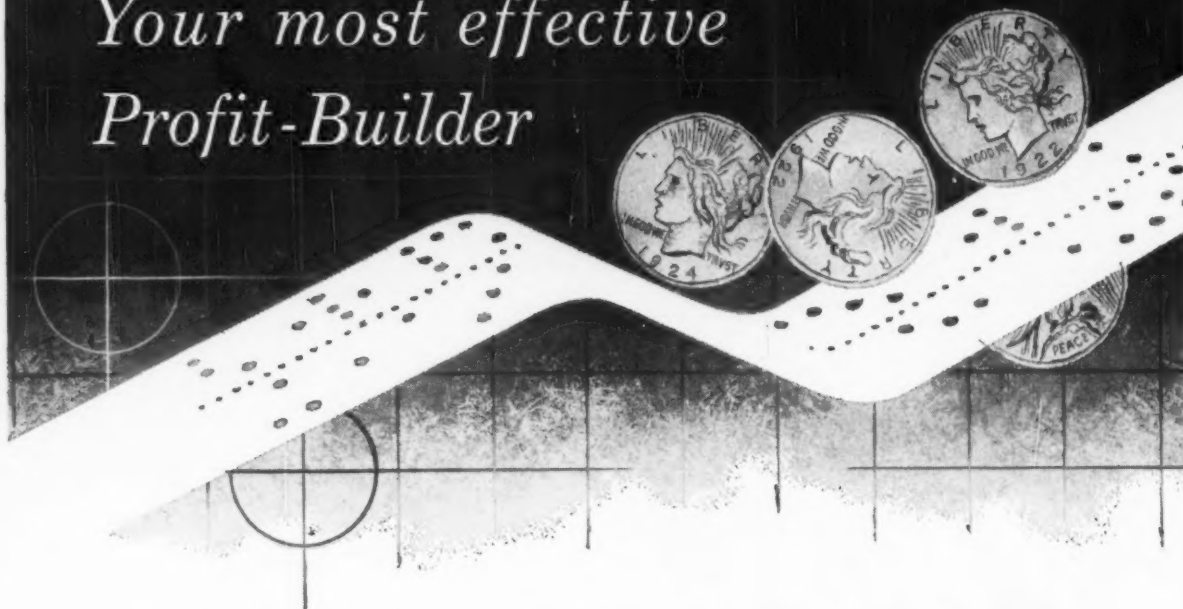
10-U AUTOMATIC



LINE TO HANDLE EVERY JOB FASTER AND BETTER AT LOWER COST!

GREATER ACCURACY...

*Your most effective
Profit-Builder*



The products that sell most successfully in today's competitive markets — and build the biggest profits for their manufacturers — are those most capable of meeting today's higher standards for quality and performance. And because greater accuracy is the sure, economical way to increase product quality and performance, precision properly applied can be your most effective profit-building tool.

Therefore, the continued use of machine tools designed for yesterday's standards of accuracy is poor economy today. That's why manufacturers are finding that the superior accuracy made possible by Pratt & Whitney Machine Tools means more accurate components, fewer rejects . . . and products that perform better, win wider acceptance and build bigger profits.

NUMERICAL CONTROL . . . Puts Toolroom Precision into Production

Pratt & Whitney conducts an intensive program of research and development that is making it possible to combine toolroom standards of accuracy with production-line speed, efficiency and economy.

One of the most outstanding recent developments produced by this program is Numerically-Controlled equipment. Applied to P&W Jig Borers, Rotary Tables and other Machine Tools, numerical control eliminates human error and makes it possible to produce jobs calling for "tenths" precision *as fast* as work calling for "thousandths" limits. Output is greatly increased, and the extreme accuracy of these machines can be applied efficiently to production work. Most important — with more time spent in actual machining and less time spent in reading and interpreting blueprints, manually positioning the machine, checking settings and other non-productive operations — *machine utilization efficiency is more than doubled!*



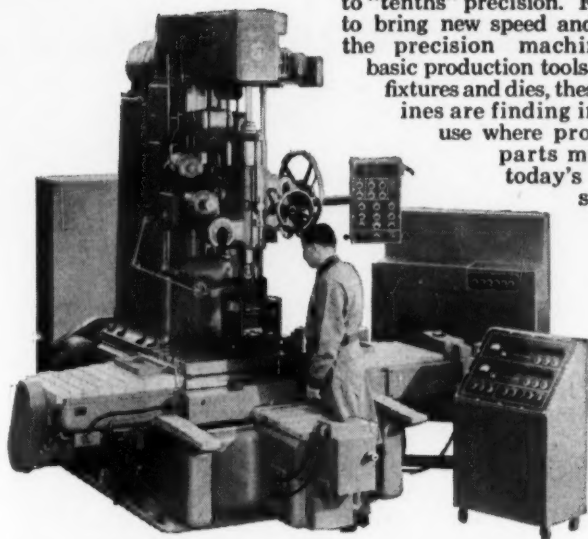
PRATT & WHITNEY

FIRST CHOICE FOR ACCURACY

MACHINE TOOLS • GAGES • CUTTING TOOLS

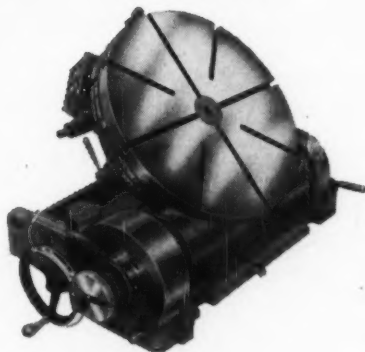
P&W JIG BORERS ...

locate, bore and check accurate to "tenths" precision. First used to bring new speed and ease to the precision machining of basic production tools like jigs, fixtures and dies, these machines are finding increasing use where production parts must meet today's precision standards.



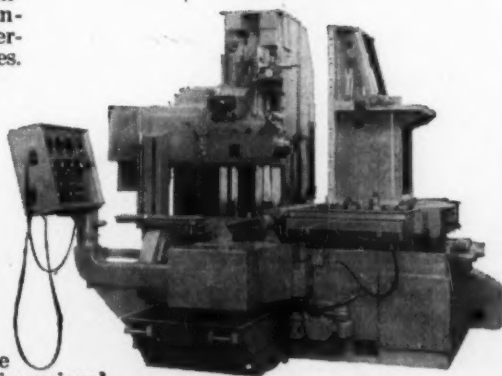
P&W PRECISION ROTARY TABLES ...

make it possible to combine lower production costs with increased accuracy where machining requires circular spacing or angular positioning. Also used for inspecting or graduating, these P&W Tables combine rugged construction with accuracy to seconds of arc! Produced in a complete line, that includes horizontal, vertical and tilting types.



P&W KELLER MACHINES ...

are automatic, tracer-controlled millers that accurately reproduce the shape of any 2-dimensional template or 3-dimensional model. The ideal machine for fast, economical production of dies, molds and prototypes, P&W Kellers are now finding extensive use for production work.



Other PRATT & WHITNEY Machine Tools

VERTICAL PRECISION HOLE GRINDER

"Tenths" accuracy plus grinding speeds to 100,000 rpm.

"VELVETRACE" MILLING MACHINE

Ultimate in accuracy for 3-dimensional tracer-controlled reproduction.

MAGNEPARK VERTICAL PROFILERS

A new concept in tracer control for automatic 360° profiling.

AUTOMATIC DUPLICATING MACHINES

Duplicate dies and molds quickly, accurately and economically.

CUTTER and RADIUS GRINDERS

Grind practically every type of standard and special cutter ... quickly, accurately.

VERTICAL SHAPERS

Handiest machines in any shop for fast, accurate handling of irregular shaped work.

MODEL C THREAD MILLERS

Unusually versatile; set new standards for accuracy, finish and economy.

DEEP HOLE DRILLERS

Twin drilling units produce true holes up to 129" deep in a single, uninterrupted operation.

Free Literature ... on all P&W Machine Tools is available. No obligation. Write on your company letterhead, and ask for Circular 605-1.

PRATT & WHITNEY COMPANY, INCORPORATED 10 Charter Oak Boulevard, West Hartford, Connecticut

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CALIF., MILWAUKEE, WISC., NEW YORK, N. Y., PHILADELPHIA, PENNA., PITTSBURGH, PENNA., ROCHESTER, N. Y., ST. LOUIS, MO., SAN FRANCISCO, CALIF., SYRACUSE, N. Y., WEST HARTFORD, CONN.

Representatives in the following cities:

DALLAS, TEX., HOUSTON, TEX.

Howard Beacham tripled wheel life,



Howard Beacham has been a Bay State Abrasive Engineer for fifteen years and his total experience is double that. He's worked on grinding problems that have involved every type of metal in jobs as tiny as miniature bearings and as big as the world's largest air compressors and steam turbines.

cut dressing frequency in half at New Process Gear

The closer you get to automation, the more it hurts to have production interrupted. That was the principal problem at Chrysler's New Process Gear Division where semi-automatic grinding of flats on truck transmission shafts was halted by wheel dressings every eleven pieces.

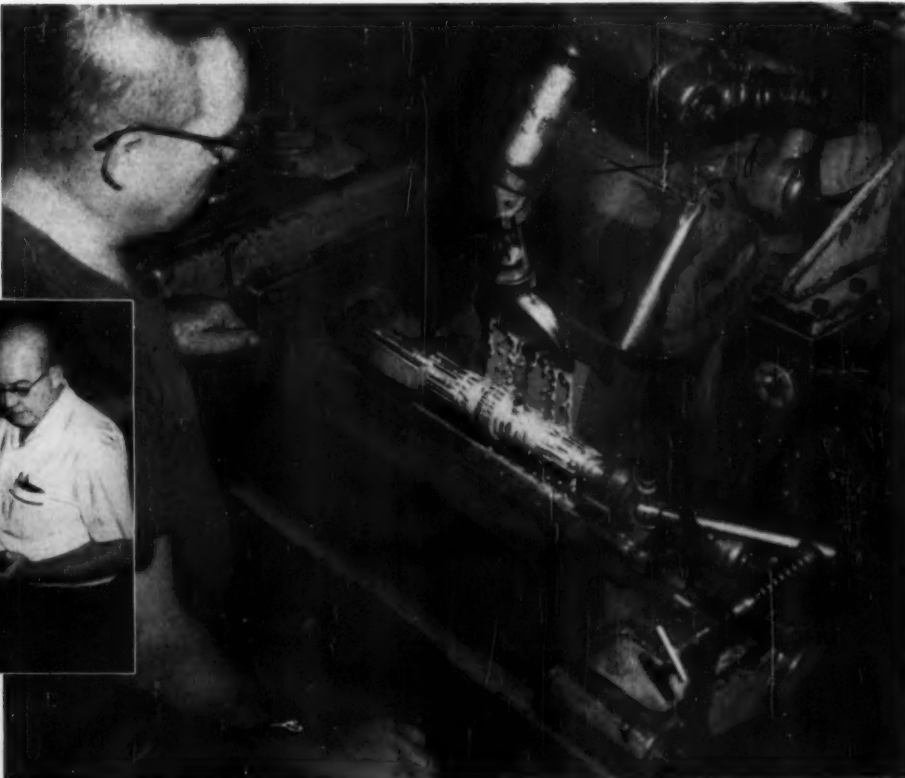
The three competitive wheels used in this simultaneous "cam grinding" operation wore down so fast they had to be replaced every week. And, on top of that, an alarming number of shafts were being cracked during the grinding operation.

Bay State's Howard Beacham was called in on the job. He specified a trio of Bay State wheels that produced really spectacular results.

Production jumped to twenty-five perfect shafts per dressing and wheel life went up to three full weeks. Finish was excellent, too.

Why not talk to your own Bay State representative next time you have a grinding problem? Like Howard Beacham he's a trained specialist. *Better grinding at lower cost . . . that is his business.*

Operator Henry Kotas runs grinder equipped with one 24 x 1-21/32 x 12 and two 24 x 1-3/4 x 12 Bay State wheels. The three wheels simultaneously grind flats on main shaft for 5-speed truck transmission.



(Above) Manufacturing Engineer Wiley Bell and Plant Superintendent Nelson Fisk examine finished truck transmission shaft.



BAY STATE ABRASIVES



Bay State Abrasive Products Co., Westboro, Massachusetts.

In Canada: Bay State Abrasive Products Co., (Canada) Ltd., Brantford, Ontario.

Branch Offices: Bristol, Conn., Chicago, Cleveland, Detroit, Pittsburgh. Distributors: All principal cities.

die blocks

For the production of ferrous and non-ferrous forgings in drop hammers, forging presses, and forging machines, we supply five types of pre-hardened, ready-to-use die blocks, inserts, and tools in SPECIAL MACHINING QUALITY that is commercially machinable as hard as 477 BHN with modern, high-speed or carbon tools.

FX—die blocks, inserts and tools for an unusually wide variety of hot work applications, both ferrous and non-ferrous, where reasonable first cost and large volume production is important.

DURODI—die blocks, inserts and tools for a wide variety of closed die-forgings made on forging presses, hammers and

machines, involving unusual heat and abrasion problems.

CUPRODIE—die blocks for drop hammer and forging press applications, especially for light and medium weight forgings where long runs and high resistance to heat and abrasion are required.

SHELLEX—die blocks, inserts and tools for long run, close tolerance applications on forging presses, hammers and machines, requiring resistance to impact, shock, and sudden temperature change.

W4X—Inserts, tools and die blocks for close tolerance, long production runs of extrusion and forging presses, forging machines, and hammers.

forgings

"Forgings by Finkl" is synonymous with highest quality because our chromium-nickel-molybdenum heavy-duty forgings have the strength, stamina, and fatigue resistance to withstand the severe stresses and torsional strains encountered in modern heavy-duty machinery.

In addition to our CNM forgings, we are able to furnish forged products of AISI carbon and alloy steels, or many special analyses in the smooth forged, rough- or finish-machined condition.

Among the many specialties we have

produced from our MO-LYB-DIE processed alloys are:

- Repair parts for all types of forging equipment
- Containers, liners, and plungers for extrusion presses
- Crankshafts for trimming presses, punch presses, mechanical forming presses, nail machines, engines, and pumps
- Gear and pinion shafts
- Plastic mold, and die casting die blocks
- Cylinders

electric furnace steels

Finkl is one of the few heavy forge plants in the United States to operate its own electric melt shop. This modern, fully equipped shop makes possible not only better control of steel quality, but also more precise production planning of all

operations. Since each heat is melted and processed to meet a specific order or application, we can give individual attention to the particular requirements of each customer, thus assuring the best forging for your job.



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BUILT AROUND THE WORLD



**THESE NAMEPLATES
MEAN WORLD-WIDE
AVAILABILITY OF SERVICE,
PARTS AND UNITS OF
CONSISTENT QUALITY**

When you use Vickers hydraulics, you can send your machinery almost anywhere in the free world with assurance that consistent quality service units will be available.

Vickers manufacturing facilities, as indicated by the nameplates above, are strategically located convenient to industrial centers around the world. Vickers consistent quality and parts interchangeability are maintained through a systematic program of inspection and test by the parent organization. Any component built in one plant will be compatible with components and systems from all other plants.

These are added advantages to you when you specify Vickers hydraulics on your machinery for export or for your machinery built overseas.

**FOR FURTHER INFORMATION
PLEASE WRITE FOR BULLETIN 5500**

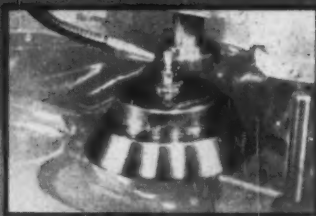
VICKERS INCORPORATED
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FELLOWS

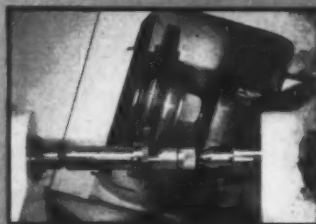
GEAR



CUTTING

	 3" FINE-PITCH	 NO. 4GS	 7-TYPE	 7A-TYPE	 7B-TYPE
Max. Pitch Diameter	3" ext., 2" int.	6"	7" spur; 6-1/2" hel.	7"	18"
Max. Diametral Pitch	40 steel, 30 brass	5/7 spur, 6 hel.	6 spur, 6/8 hel.	5/7 spur, 6 hel.	3/4
Max. Face Width	3/4"	2"	1-1/2" ext., 1" int.	2" ext., 1-1/2" int.	5" e
Max. Strokes Per Min.	2000	635	450	450	300





*Max. P.D. internal—5-1/2"



FINISHING

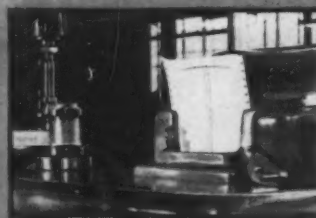
SHAVING MACHINES

spur and helical gears

	 NO. 4 FINE-PITCH	 NO. 8 "FULL-TOOL"	 NO. 11 INTERNAL	 NO. 12 FELLOWS REISHAUER
External & Internal	ext. only	yes	int. only	
Max. Pitch Diameter	4"	8"	***	
Max. Diametral Pitch	20	4	6	
Max. Face Width	1"	2-1/2"	1-1/2" up to 10P; 1" 12 to 16P	
Max. Spread of Centers	12"	**	***	

Spur and helical, max. O.D. 12". Max. face width, spur, 6-3/4"; helical: depends on pitch and helix angle. Pressure angles: 14-1/2° to 30°. Pitch ranges: 6 to 48 D.P. or 20 to 120 D.P.






Also 12", 18" and 24" machines for externals only. **Depends upon work-holding fixture. ***Depends upon design of gear.



INSPECTION

COMPOSITE CHECK

external and internal spur and helical gears.

	 No. 4 Fine-Pitch RED LINER	 No. 8M RED LINER	 No. 20M RED LINER	 No. 12M Involute Measuring	 No. 12H Lead Measuring
Max. Pitch Diameter	4"	***	18"	12"	12"

Nos. 24M Involute and 24H Lead Measuring Instruments available with capacity of 24 inches.

***Depends upon design of gear

PRODUCTION EQUIPMENT

GEAR SHAPERS

internal spur and helical gears



6A-TYPE



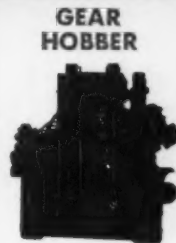
No. 12



36-TYPE



120-INCH



GEAR
HOBBER

NO. 12GH2
HELIGUIDE

Spur and helical, max. O.D. 12". Max. face width, spur, 6"; helical, depends on helix angle and diameter. Max. diametral pitch 4. Hob speeds 123 to 430 R.P.M.

18"	12"	36"	120"
3/4 spur, 5/7 hel.	3/4 spur, 5/7 hel.	3 spur, 4/5 hel.	2 spur, 4 hel.
5" ext., 3" int.	4"	6"	8"
300	550	300	148

Also available: No. 10 Rotary Gear Shaper—10-spindle machine for very high production rates. Max. P.D. 12". Max. D.P. 3/4 spur, 5/7 helical. Max. face width 3". Max. cutting speed 500 strokes per minute.

FELLOWS injection molding equipment

Fellows Plastics Injection Molding Presses are the fastest fully-automatic machines in their capacity ranges. Sensitive, accurate, built-in controls assure fast, reject-free production with minimum operator attention.



Model 3-125



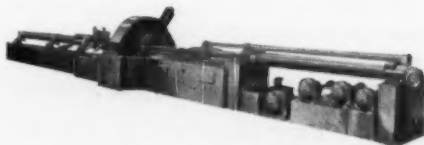
Model 6-200



Model 12-350

Capacity	3 to 4-1/2 oz.	6 to 9 oz.	12 to 20 oz.
Pounds per hour	45	75	150
Cycles per hr. (dry run)	600 to 840	490 to 650	600 to 800
Max. mold size	12" x 17"	15" x 21"	20" x 33"

No. 4 FELLOWS COLD-FORMING MACHINE



Cold-works metal, ferrous or non-ferrous, to desired shape by kneading or plasticizing at room temperature. External shape is tubular, internal shape is determined by a mandrel. Maximum diameter of finished work: up to 4" O.D., depending on wall thickness. Maximum length of finished work: 20'.

Fellows also builds special-purpose machines for production of gears and other related items. Descriptive literature, technical data and price information on all types of equipment shown is available on request. Contact any Fellows office.

THE FELLOWS GEAR SHAPER COMPANY

78 River Street, Springfield, Vermont

Branch Offices: 1048 North Woodward Ave., Royal Oak, Mich.

150 West Pleasant Ave., Maywood, N. J.

5835 West North Avenue, Chicago 39

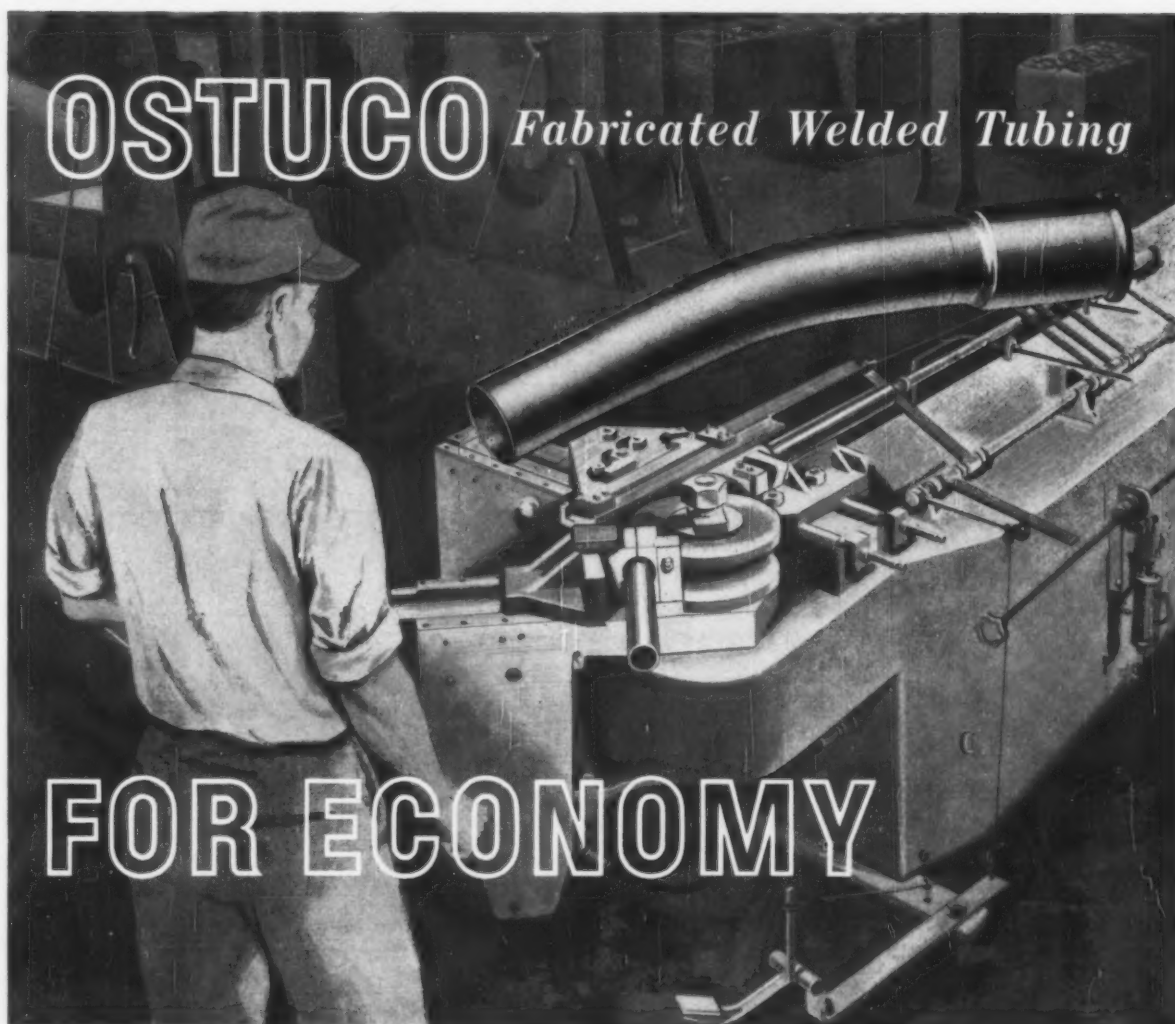
6214 West Manchester Ave., Los Angeles 45

THE
PRECISION
LINE

Fellows

Gear Production Equipment

Vacuum Cleaner Manufacturer Specifies



OSTUCO *Fabricated Welded Tubing*

FOR ECONOMY

Bending vacuum cleaner wand. A variety of fabricating operations also is performed on Ohio Special Quality Seamless Tubing.

“ Value analysis showed it would be more economical to buy than produce fabricated welded tubing parts for our new cleaner. What's more, we could avoid additional capital investment in equipment.

“So we added Ohio Seamless to our production line. They have the equipment and facilities to meet our design requirements and to hold to our stepped-

up schedules. And we don't pay shipping costs on scrap — just on finished parts . . .

Let Ohio Seamless translate your designs into finished parts . . . conserve your capital . . . cut your production and shipping costs. Contact your Ohio Seamless representative, listed in the Yellow Pages, or the mill at *Shelby, Ohio — Birthplace of the Seamless Steel Tube Industry in America.*

AA-8847



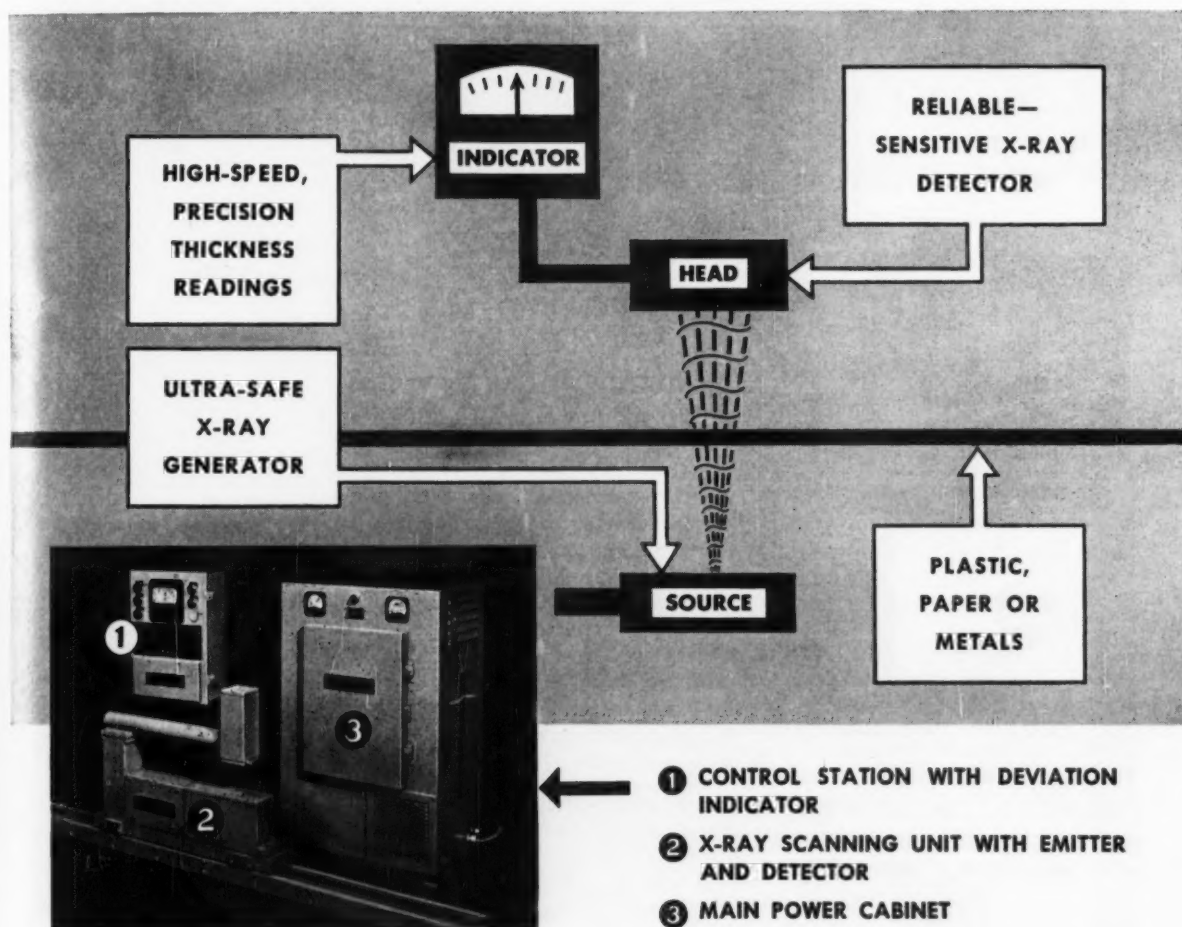
OHIO SEAMLESS TUBE DIVISION

of Copperweld Steel Company • SHELBY, OHIO

Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

SALES OFFICES: Birmingham, Charlotte, Chicago (Oak Park), Cleveland, Dayton, Denver, Detroit (Huntington Woods), Houston, Los Angeles (Lynwood), Moline, New Orleans (Chalmette), New York, North Kansas City, Philadelphia (Wynnewood), Pittsburgh, Rochester, St. Louis, St. Paul, St. Petersburg, Salt Lake City, Seattle, Tulsa, Wichita. CANADA: Railway & Power Engr. Corp., Ltd. EXPORT: Copperweld Steel International Company, 225 Broadway, New York 7, New York

FOILS and FILMS Moving at High Speed GAGED TO MILLIONTHS by New Sheffield Measuray Model 25PT

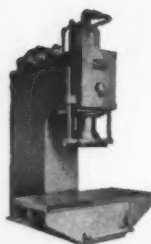


PRINCIPAL FEATURES

- Non-contact thickness or density measurement
- Accuracy obtained by 100% controlled electronic source and detector
- Scintillation type detector for reliable and sensitive X-Ray detection
- Short pulsing assures ultra-safe X-Ray generation
- High-speed response obtained by all-electronic measuring circuits
- Measures thick or thin plastics, paper and metals in sheet or strip form
- Suitable for "building block" expansion to record, sort and control — manually or automatically
- Low cost installation and maintenance

For Engineering Data Sheet No. 113-57, write to the Sheffield Corporation, Dayton 1, Ohio, U.S.A., Dept. 8.

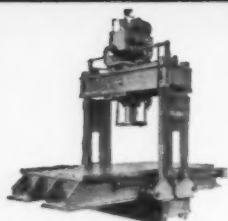
the **SHEFFIELD** *Corporation*
of Bendix Aviation
manufacture and measurement for mankind



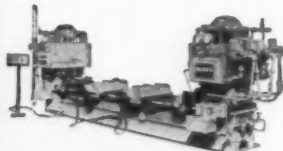
C-FRAME PRESS — for general purpose straightening, bending forcing, forming. Fast, flexible.

Elmes...

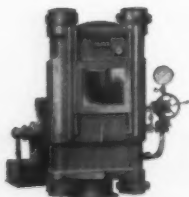
will "Job-Fit"
hydraulic press equipment



TRAVELING HEAD STRAIGHTENING PRESS — custom-built to meet special requirements.



TUBE REDUCING PRESS — another unit custom-designed for a specialized type of production.

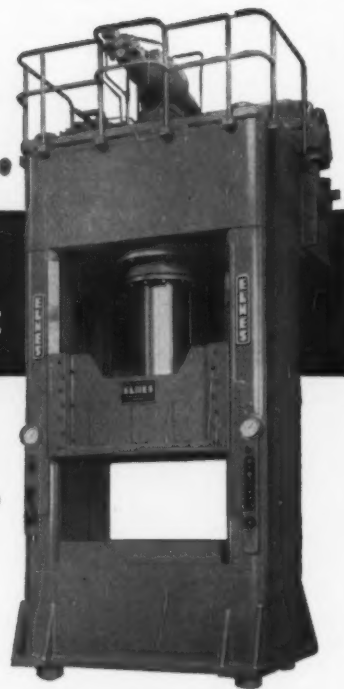


HOBBIING PRESS — a powerful tool for sinking hardened hobs into blanks of cold steel.

BULLDOZER — for heavy bending and forming. Optional choice of bed size, stroke, and speed.



to meet *your*
requirements...
exactly



Drawing and Forming

Whether you're seeking improved and more economical press performance for your present metalworking production, or there's a development planning job to be done, you can count on Elmes to provide *the right press for the job*. Elmes builds a complete line of standard hydraulic presses for a broad range of metalworking operations—for drawing and forming, coining, forging, hobbing, bending, straightening, forcing, powder metal compacting, etc.

One of these standard Elmes® designs, "as is" or with simple modifications, may fit your needs exactly. Or, your requirements may be so special as to call for development of a "custom-built" press—a type of press designing and building which has long been an important part of Elmes service to industry.

Whatever your "pressing problem", *it will pay you to call in Elmes*. It just makes sense to take advantage of engineering knowledge, skill, and foresight backed by more than 60 years of leadership in specialized hydraulic service.

See your Elmes distributor, or write us direct. Recommendations and cost estimates will be supplied promptly.

Also a complete line of COMPRESSION and TRANSFER PRESSES for PLASTICS and RUBBER MOLDING

Elmes American Steel Foundries ENGINEERING DIVISION

1166 Tennessee Avenue, Cincinnati 29, Ohio

METAL-WORKING PRESSES • PLASTICS MOLDING PRESSES • PUMPS • ACCUMULATORS



**2 to 3 times
Greater Thrust Capacity**

**8 to 12 times
Longer Life Expectancy**

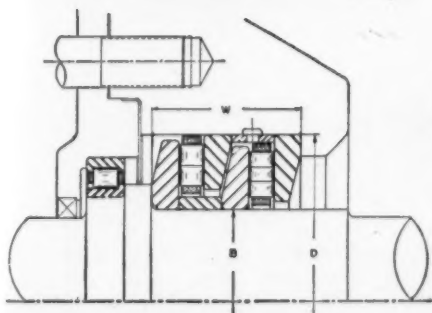
New **ROLLWAY TANDEM THRUST BEARING**

Using axial space along the shaft, rather than enlarging the housing diameter, this new Rollway tandem thrust bearing distributes the load over two or three stages of roller components. Gives 2 to 3 times more thrust capacity than conventional thrust bearings. Life expectancy is 8 to 12 times longer depending upon the number of stages.

Each stage comprises a rotatable bearing plate . . . a bronze retainer with thru-hardened steel rollers . . . a compression sleeve . . . and a stationary bearing plate. The thrust load is applied to the first stage and is by-passed by each compression sleeve in turn to the remaining stage or stages.

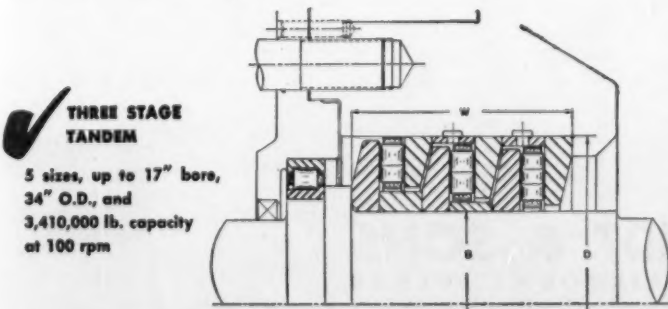
Calculated deformation of the bearing plates distributes the load uniformly on all rollers. A greater number of rollers in the first stage carries about 60% of the load, without increasing the load per roller. Compression sleeves have cross-sectional areas proportional to the load imposed. Roller variance is held within one ten-thousandth inch.

Complete Specifications on Rollway Tandem Thrust Bearings, as well as other up-to-date information on bearing design is yours for the asking. See your Rollway engineer, or write: Rollway Bearing Company, Inc., Syracuse, N. Y.



TWO STAGE TANDEM

22 sizes, up to 17" bore,
34" O.D., and
2,325,000 lb. capacity
at 100 rpm



THREE STAGE TANDEM

5 sizes, up to 17" bore,
34" O.D., and
3,410,000 lb. capacity
at 100 rpm

Tandem Thrust Bearing manufactured by Rollway Bearing Company, Inc.
under U.S. Patent Number 2,374,820.

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BEARINGS**

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PERFORATED METALS**
DESIGNED AND PRODUCED FOR EVERY PURPOSE

Steel, brass, copper, monel, bronze, aluminum, zinc, tin-plate, lead, stainless steel, coated metals, bonded materials, plastics and paper punched as required and for all kinds of screens.

We can guarantee sheets that are perfectly flat, straight, parallel on sides, and free from buckle or camber.

A tremendous variety of screens. Our modern tool and machine shop is constantly building new dies placing us in a position to construct special dies as conditions may demand.

Metallurgical and design assistance.

89 years of experience. Large enough for big jobs, small enough for personal attention.

CHARLES  **MUNDT & SONS**
59 FAIRMOUNT AVENUE
JERSEY CITY 4, N. J.

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PERFORATING SPECIALISTS OF ALL TYPES OF MATERIALS

MISSILE MANUFACTURER

63% savings in time . . .

SPECIAL EQUIPMENT MAKER

Output . . .

SUBCONTRACTOR

Excellent . . .

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\$25.92 . . .

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Above \$4000 yearly savings...

excellent accuracy, duplicating to less than .001" . . . clean front and ease of conversion to regular or Copymatic operation are outstanding . . . removing 15 to 30% more metal than our best (lathes) — twice that of some.

MACHINE TOOL BUILDER

82% time saved . . .

MACHINING SUBCONTRACTOR

Saving . . .

EQUIPMENT

Output . . .

TOOL

82% . . .

AIRCRAFT SUBCONTRACTOR

Helps make deliveries and money. . .

NOTED BOAT BUILDER

\$2000 annual saving . . .

ELECTRONICS MANUFACTURER

Production increased 200%

Shown is 90° COPYMATIC Lathe with 4-Way Power Rapid Traverse, (optional extra). 45° COPYMATIC and Powershift Feedselector headstock also available.



HOW TO JUSTIFY YOUR LATHE REPLACEMENT

LOOK AT
LODGE & SHIPLEY
FIRST!



More production at lower cost is the answer to constant upward pressure on prices. Savings proved in Lodge & Shipley case histories* show the wisdom of

investigating and buying a Lodge & Shipley POWERTURN Lathe as a profitable replacement.

Production requirements change. The lathe purchased just a short time ago may not be adequate . . . judged by today's production, accuracy and economic standards. Details in Sweet's Machine Tool File; contact local representative through Yellow Pages or write direct for case histories and Bulletin No. L-103:

The Lodge & Shipley Co., 3073 Colerain Avenue, Cincinnati 25, Ohio.

*Names and details on request.

Lodge & Shipley

Tubexperience in action



"They use this Super Alloy tubing in missiles, rockets and jets

—so you know it can lick your heat and corrosion problems!"

*"It's made by Superior Tube in your choice of 16 different materials. Believe me, this tubing can take the severest conditions of heat, corrosion and oxidation. Has very high fatigue and creep strength even at temperatures over 1000°F."

If you have a temperature and corrosion problem that causes failure no matter what type of tubing you have tried, get your Superior distributor to order Super Alloy tubing for you—it is the tubing for virtually every critical application of this nature.

Super Alloy tubing offers the important properties mentioned above, plus the dependability and longer service life built into it by Superior skills and experience. We will put your tubing

through many special examinations if you want us to—eddy current and ultrasonic, hydrostatic, and hot tensile tests, stress rupture tests, qualitative and quantitative analysis, and many others—for your complete assurance in its ability to perform as required.

Our continuing test program on Super Alloy tubing has amassed much useful information on mechanical properties. You will want to make a study of them and their potential for use in your applications. They are covered in our Bulletin 70. Send for copies. Superior Tube Company, 2004 Germantown Ave., Norristown, Pa.

Superior Tube

The big name in small tubing
NORRISTOWN, PA.

All analyses .010 in. to 3/8 in. OD—certain analyses in light walls up to 2 1/2 in. OD

West Coast: Pacific Tube Company • 5710 Smithway St., Los Angeles 22, Calif. • RAYmond 3-1331

CLEVELAND is the name and the place for ABRASIVES

Top quality Realsteel
shot and grit...from our



NEW
Toledo
Plant

THIS latest addition to our Toledo production facilities has been built, improved, and staffed to produce only the best in quality metallic abrasives.

Toledo Realsteel shot and grit is produced here in an electric furnace, oven-dried, heat treated, screened and packaged, using the latest quality control methods.

This plant is strong evidence that we are interested in turning out a top quality product, to rigid specifications, in order that you may have the finest in metallic abrasives to fit your particular requirements.

Palletized, banded, covered . . . any way you wish.

Try Toledo Realsteel . . . another in the Cleveland line of Persuasive Abrasives.



CLEVELAND
ABRASIVES

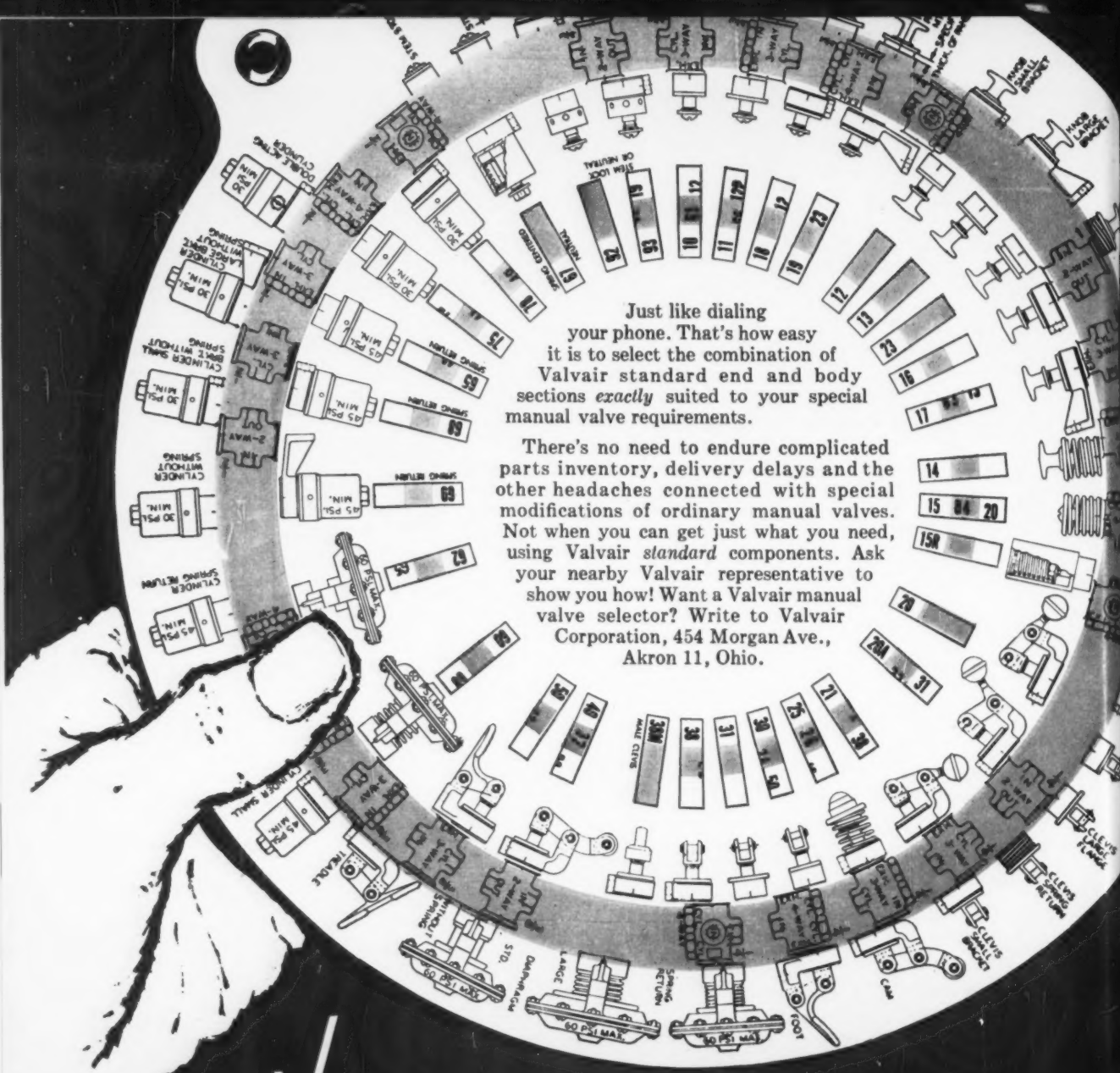
1. Realsteel Shot and Grit
2. Pearlitic Malleable
3. Normalized
4. Hi-Strength "A"
5. Chilled Iron
6. Drawn Steel



the CLEVELAND metal abrasive company

.....world's largest producer of metallic abrasives.....

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Just like dialing
your phone. That's how easy
it is to select the combination of
Valvair standard end and body
sections *exactly* suited to your special
manual valve requirements.

There's no need to endure complicated
parts inventory, delivery delays and the
other headaches connected with special
modifications of ordinary manual valves.
Not when you can get just what you need,
using Valvair *standard* components. Ask
your nearby Valvair representative to
show you how! Want a Valvair manual
valve selector? Write to Valvair
Corporation, 454 Morgan Ave.,
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Valvair *manual valves*

...unlimited combinations using standard components!

Find us fast
in the
"Yellow Pages"

Compare
and you'll
buy

SALES AND SERVICE FROM LOCAL STOCK

Valvair

Representatives in principal cities
throughout the world



Photo courtesy of Cities Service Oil Company (Delaware)

Now! Buy one truck...do the job of two!

The Clarklift fork trucks pictured above are demonstrating a new *dual* function. They stack 30% higher than equipment of similar, retracted mast height... can *also* drive through low boxcar doors and other tight clearances. Actually, it means you're getting two machines in one.

Utilizing Clark's new *Triple Stage Upright*, you are able to take better advantage of the *full* height of your warehouse... yet, use the *same* fork truck for loading rail cars or highway trucks, low-door

elevators, etc. The Triple Stage Upright enables your equipment to *work full time*, and on many *varied jobs* with no stacking height loss, no clearance problems, *no work stoppages*.

A specification sheet showing complete details is available on request.

Simply write: Triple Stage Upright, Clark Equipment Company, Battle Creek, Michigan.

CLARK[®]
EQUIPMENT

CLARKLIFT is a trademark of Clark Equipment Company

ARMSTRONG

Quality

TOOLS

More than meets the eye

There are extra values in ARMSTRONG TOOLS that become apparent only with use.

TOOL SENSE—convenience in use—the most efficient "*tool approach*" built into ARMSTRONG Tool Holders; the balance and "*feel*" of an ARMSTRONG Wrench; the *rigidity* of ARMSTRONG "C" Clamps; the extra *toughness* of ARMSTRONG Lathe Dogs and Eye Bolts; the universal *adaptability* of ARMSTRONG Set-up and Hold-down Tools—the evidence of "*tool sense*", the understanding of each tool's requirements.

STRENGTH—built into each individual ARMSTRONG TOOL is a safety factor of extra *strength*—*strength* beyond any need, the inherent strength of specially selected materials enhanced by proper heat treatment and hardening.

UNIFORM QUALITY—the uniform quality made possible by modern manufacturing methods, in a specially-built plant equipped with every needed quality control. The name ARMSTRONG with the Arm-and-Hammer Trade Mark is universally recognized as a guarantee of finest quality.

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

5209 WEST ARMSTRONG AVE. • CHICAGO 30, ILLINOIS



The men with the peanuts

Aside from the fact that they are gang-poured, "peanut" rolls get the same careful treatment here at Mack-Hemp that is accorded the largest plate mill rolls. Mold preparation... alloying... melting and pouring... machining and grinding... each receives the same attention whether the roll weighs 140 pounds or 140,000.

This painstaking care at every step in production—an outgrowth of our 135 years' experience—is a principal reason why *you get more tonnage from the rolls with the striped red wabblers.*

MACKINTOSH-HEMPHILL
Division of E. W. BLISS Company
Pittsburgh and Midland, Pa.



9 WAYS TO SHARPEN YOUR PURCHASING PENCIL BY BUYING CARPENTER STAINLESS TUBING AND PIPE

1 Multiple Lengths. If you order delivery in multiple lengths, you can save up to 3½ %.

2 Selected Mill Lengths. Automatic savings from 2% to 5% if so ordered.

3 Shorts. If you order 90% of your requirement in cut lengths and 10% in short lengths, you can save 5%.

4 Standard Tolerances. If you order within published standard tolerance limits, you can save up to 12%; in other words, closer than standard tolerances add 6 to 12% to the cost.

5 Quarterly Buying. Place your order on the mill for delivery during a specific three month period. This way you will be able to provide material for a three month period and you'll have potential saving through purchasing at a lower cost.

6 Consider the Next Quantity Bracket. If your requirements for tubing or pipe come close to the upper limits of a quantity bracket, consider future use for this material and jump to the next bracket. Often you will gain several hundred feet of product by jumping to the next bracket at no added per unit cost.

7 Finish. Recently there have appeared on the market, many conditions of manufacture, ranging from as-welded to full finished. Consider the service to which this tubing or pipe will be applied and consider the few pennies involved for obtaining the best finish compared with the dollars lost by downtime and lost production through use of the cheapest grade available.

8 Standard Sizes. Carpenter Stainless Tubing and Pipe are made available through a nationwide network of distributors who stock standard sizes, so if you need something quickly you can get it. Don't design equipment, unless it is unavoidable, around other than standard sizes of tubing and pipe.

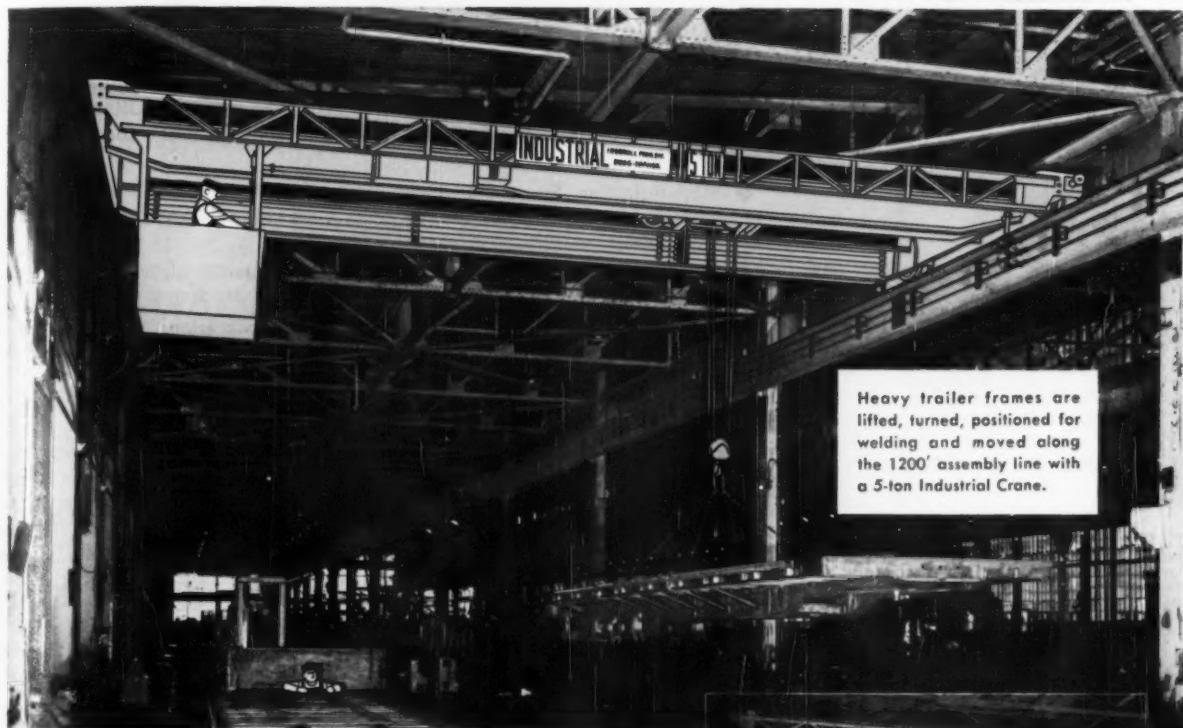
9 Performance. To guarantee the greatest operating economy, order from Carpenter. Carpenter WELD-TROL Stainless Tubing and Pipe give you the greatest degree of uniformity available in tubing today. This key factor is your ticket to longer, cost-saving performance. Contact your nearest authorized distributor or write for technical bulletin. The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

*your master key
to cost-saving
corrosion control*



Stainless Tubing & Pipe

7 more **Industrial** Cranes speed production here...



Heavy trailer frames are lifted, turned, positioned for welding and moved along the 1200' assembly line with a 5-ton Industrial Crane.

Another manufacturer of highway trailers chooses Industrial!

A leading manufacturer of truck trailers uses *seven* 5-ton **INDUSTRIAL** top-running, double-girder, motor-driven cranes in its midwest plant. Two assembly bays, each 1200 feet long are served by one cab-controlled and four floor-controlled **INDUSTRIAL** cranes, moving materials and heavy frames along the assembly lines. Two other floor-controlled **INDUSTRIAL** cranes handle materials in the machine shop.

Constant, regular use in rugged service such as this proves to **INDUSTRIAL** users that *Industrial Cranes are best for the long run.*

- Industrial builds a complete line of cranes for every need. Write for catalogs.

Agents in all principal industrial cities.



Floor-controlled assembly crane

Two floor-controlled Industrial cranes move these heavy duty goose-neck trailers along a 1200-foot assembly line. The frames weighing 7000 lbs. and more are placed with precision and speed.

One hand control

Industrial's exclusive control box design makes one-hand control easy.

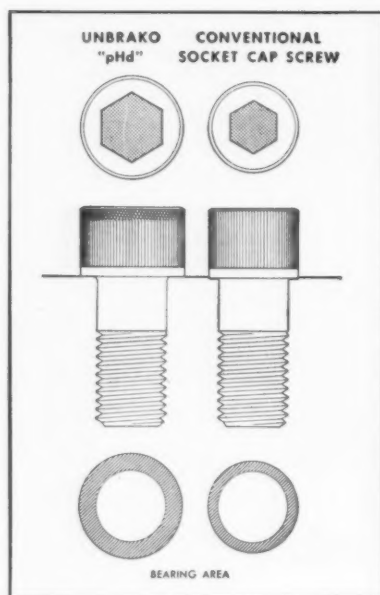


Borg-Warner® INDUSTRIAL CRANES

1620 S. PAULINA STREET, CHICAGO 8, ILLINOIS

Export Sales: Borg-Warner International, 36 South Wabash Ave., Chicago 3, Illinois

Up to 233% more holding power with NEW UNBRAKO pHd* socket cap screws



*pHd stands for "proper head design"—a factor in higher product reliability

Enlarged head diameter, without change in head height, increases usable fastener strength as much as 134%, provides as much as 233% more holding power. The greater clamping force achieved with the new UNBRAKO pHd means longer fastener life under dynamic loads, offers the following advantages:

- Miniaturization. Space and weight-saving through use of smaller diameter or fewer screws. The 170,000-190,000 psi of these fasteners can be used to greater advantage.
- Reduction of fatigue failures. pHd allows consistently higher preloading, a major factor in lengthening the fatigue life of threaded fasteners.
- Fewer loosened threaded fasteners under shock or vibration.
- Eliminates washers under the heads of cap screws where they are used to increase the effective bearing area.
- Minimizes effect of oversized holes on the head-bearing area.

The head diameter, enlarged on $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and 1 in. sizes, also prevents the screw head from indenting the material being assembled—a fault that normally reduces, and sometimes completely loses, the vital preload or tensile stretch that keeps the screw tight and prevents fatigue failure. pHd also provides room for a bigger socket, which permits tightening to higher recommended preloads.

COMPARISON OF UNBRAKO pHd AND CONVENTIONAL DESIGN

Each size can now be utilized with equal reliability. The bearing stress is consistent from size to size in the new UNBRAKO pHd socket cap screws.

SCREW SIZE	HEAD DIAMETER (in.)		BEARING AREA (sq. in.)		LOAD TO INDENT IN CAST IRON (lb.)		% INCREASE USABLE STRENGTH	TIGHTENING TORQUE (lb.-in.)†	
	Old	pHd	Old	pHd	Old	pHd		Old	pHd
$\frac{1}{8}$	.375	.375	.041	.041	3,280	3,280	—	165	180
$\frac{1}{16}$	.438	.468	.047	.072	3,760	5,760	54	325	360
$\frac{3}{16}$	.562	.562	.102	.102	8,150	8,150	—	600	660
$\frac{1}{4}$	.625	.656	.116	.148	9,270	11,800	27	1,000	1,040
$\frac{1}{2}$	.750	.750	.188	.188	15,000	15,000	—	1,450	1,590
$\frac{5}{16}$	.812	.843	.209	.247	16,700	19,700	18	2,050	2,270
$\frac{3}{8}$	.875	.937	.203	.305	16,200	24,400	51	2,900	3,190
$\frac{7}{8}$	1.000	1.125	.223	.432	17,800	34,600	94	5,050	5,600
$\frac{1}{2}$	1.125	1.312	.254	.594	20,300	47,500	134	8,000	8,900
1	1.312	1.500	.364	.785	29,100	62,800	116	10,550	13,600

†Normal recommended seating torques for unplated screws, fine threads

‡Available as a special only (listed for dimensional data)

High Reliability

SPS research is continually developing fasteners with higher and higher standards of predictable performance. By installing SPS high reliability fasteners in your assemblies, you increase your overall product reliability.

"High Reliability" is a booklet just published by SPS. Write for your copy today.

The new UNBRAKO pHd socket head cap screw is now available through all authorized industrial distributors at no increase in price. Specify UNBRAKO pHd when ordering. For technical data and specifications, send for Bulletin 2406. UnbraKo Socket Screw Division, STANDARD PRESSED STEEL CO., Jenkintown 17, Pa.

We also manufacture precision titanium fasteners / write for free booklet

SPS

Jenkintown • Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nuti-Shel Co. • SPS Western • Standco Canada Ltd. • UnbraKo Socket Screw Co., Ltd.



Are you getting your 19 minutes?

Recent studies prove the average manufacturer operates at a profit *only during the last 19 minutes of every working day.*

What happens to the rest of the day's output? According to the National Association of Manufacturers, it goes to pay the costs of doing business.

Think what this means to manufacturers attempting to produce profitably with obsolete equipment...with machining unavoidably representing a large part of the manufacturing cost.

The thin line between profit and loss in your operation can well hinge on your taking advantage of modern, high-speed machine tools with ample power, reserve feeds and speeds, and maximum flexibility.

If you have obsolete equipment in your shop, now is the time to look at it closely and critically. The difference between the old and the new may amaze you. Find out now just how much obsolete machines are holding you back.

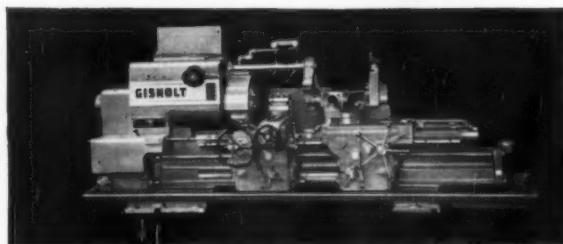
Why not call in your Gisholt Representative and talk it over with him? He'll give you fair and accurate appraisals of any machine's productive output. Call him today.

GISHOLT

MACHINE COMPANY

Madison 10, Wisconsin

ASK YOUR GISHOLT REPRESENTATIVE ABOUT FACTORY-REBUILT MACHINES WITH NEW-MACHINE GUARANTEE



Gisholt MASTERLINE Saddle Type Turret Lathe

Rugged headstock gear train provides 24 different forward speeds—all from a single-speed motor, for full power on all cuts.

Hydraulic speed selector permits effortless speed shifts without stopping spindle or shifting gears.

Here's a rugged, powerful machine that delivers maximum output and accuracy from today's carbide tools—and has ample reserve to meet tomorrow's tooling requirements.

Contact your Gisholt Representative today for full details.

Gisholt Machine Company
Madison 10, Wisconsin

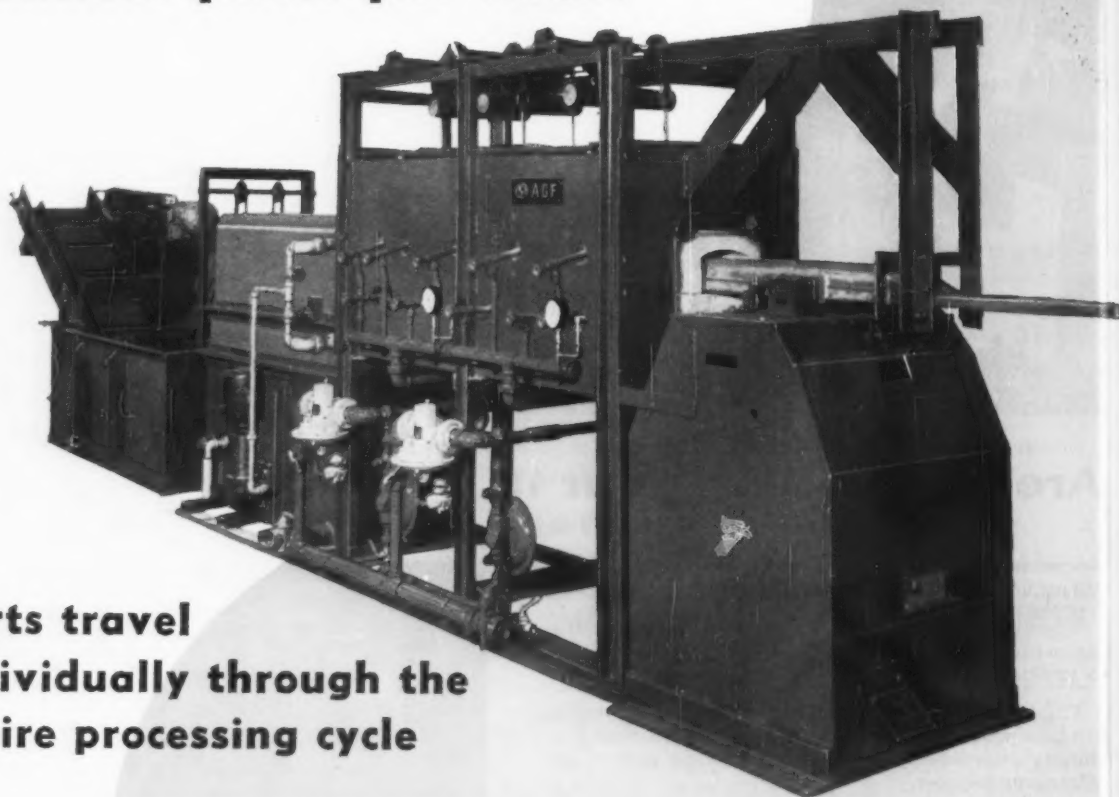
- ☐ Send Saddle Type Turret Lathe Literature.
- ☐ Have Gisholt Representative call.

Name.....Title.....

Street Address.....

City.....State.....

Consistent Uniformity as you Bright Harden and Bright Anneal at 1850° — 100 pounds of stainless parts per hour!



**Parts travel
individually through the
entire processing cycle**



This new Shaker Hearth employs an alloy muffle which incorporates a purging, heating and water-jacketed cooling section, and seals into an automatic conveyORIZED oil tank.

Among the many operational advantages of this new line of Reciprocating Furnaces, are the maintenance of -80° to -90° F. dew points . . . complete atmosphere uniformity throughout the processing cycle . . . and a very low consumption of atmosphere gas . . . Batch purging, heating and cooling are eliminated . . . and the parts may be observed throughout the entire processing cycle through openings in the charge and discharge ends of the muffle.

Write for Equipment Catalog #8A.



AMERICAN GAS FURNACE CO.

1004 LAFAYETTE STREET — ELIZABETH 4, N. J.

"Pioneers since 1878"

HARD GEAR HONING

CURRENT RESULTS

The following records are taken from current gear honing operations to show how some of the troublesome hazards of gear manufacturing are overcome by honing.

WHAT HONING ACCOMPLISHED

GEAR "A"

A lead error of .0008" was reduced to .0001"

GEAR "B"

Runout was improved .0020"

GEAR "C"

Notable improvement in both surface finish and in amount of tooth kickout

GEAR "D"

Variation in involute form improved .0002"

GEAR "E"

Size over pins reduced .004" and all nicks removed. Essentially a salvage job

THESE ARE THE GEARS BEING HONED

Gear	No. Teeth	Pitch Dia.	Rockwell "C"	Stock Removed	TIME	
					Honing	Floor to Floor
"A" INTERNAL	83	5.7832	58-63	.0015	40 sec.	70 sec.
"B" PLANET PINION	15	.790	56	.0005	27 sec.	31 sec.
"C" REAR SUN GEAR	45	2.3726	54	.0006	30 sec.	34 sec.
"D" REAR SUN GEAR	45	2.508	58	.001	24 sec.	30 sec.
"E" SPUR GEAR	46	6.000	60	.004		3 min. 25 sec.

NOTE: Hone Life, Gear "B"—6000 to 8500 pieces
Gear "C"—3000 to 4000 pieces

Write for Bulletin H-57-2



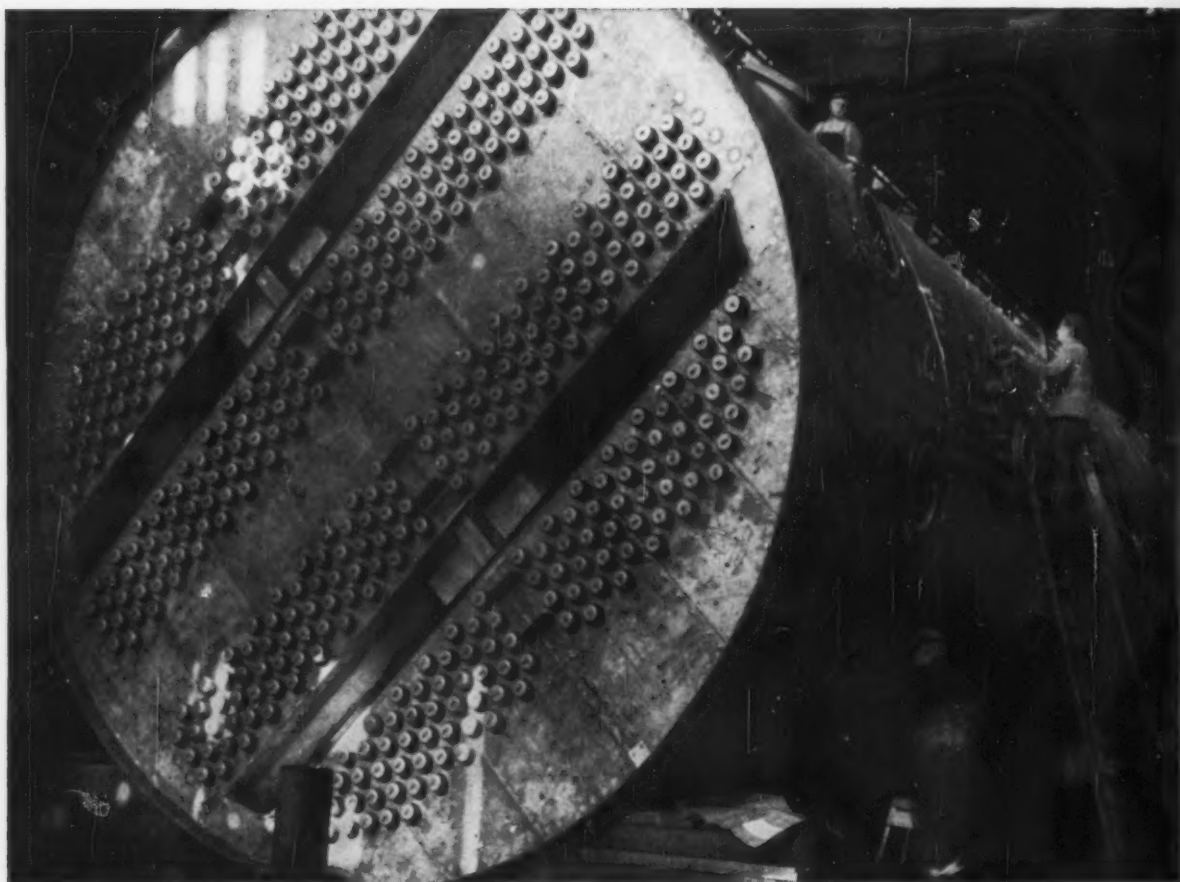
SPUR AND HELICAL GEAR SPECIALISTS
ORIGINATORS OF ROTARY SHAVING,
GEAR HONING AND ELLIPTOID

NATIONAL BROACH & MACHINE CO.

5600 ST. JEAN • DETROIT 13, MICHIGAN

WORLD'S LARGEST PRODUCER OF GEAR SHAVING EQUIPMENT

8098



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At Sun Ship, STAINLESS STEEL is synonymous with EXCLUSIVE, because Stainless is never exposed to contamination by fabrication with ordinary carbon steel tools.



Working with the 300 to 400 series of alloys, clad steel, aluminum and other alloys, Sun fabricates pres-

sure vessels, tanks, towers, troughs, autoclaves, reactors, hoppers, platework and machinery in all sizes and types. Each to exact specifications. Each with an additional quality feature...EXCLUSIVE.

SUN SHIP

BUILDING & DRY DOCK CO.
CHESTER, PENNSYLVANIA



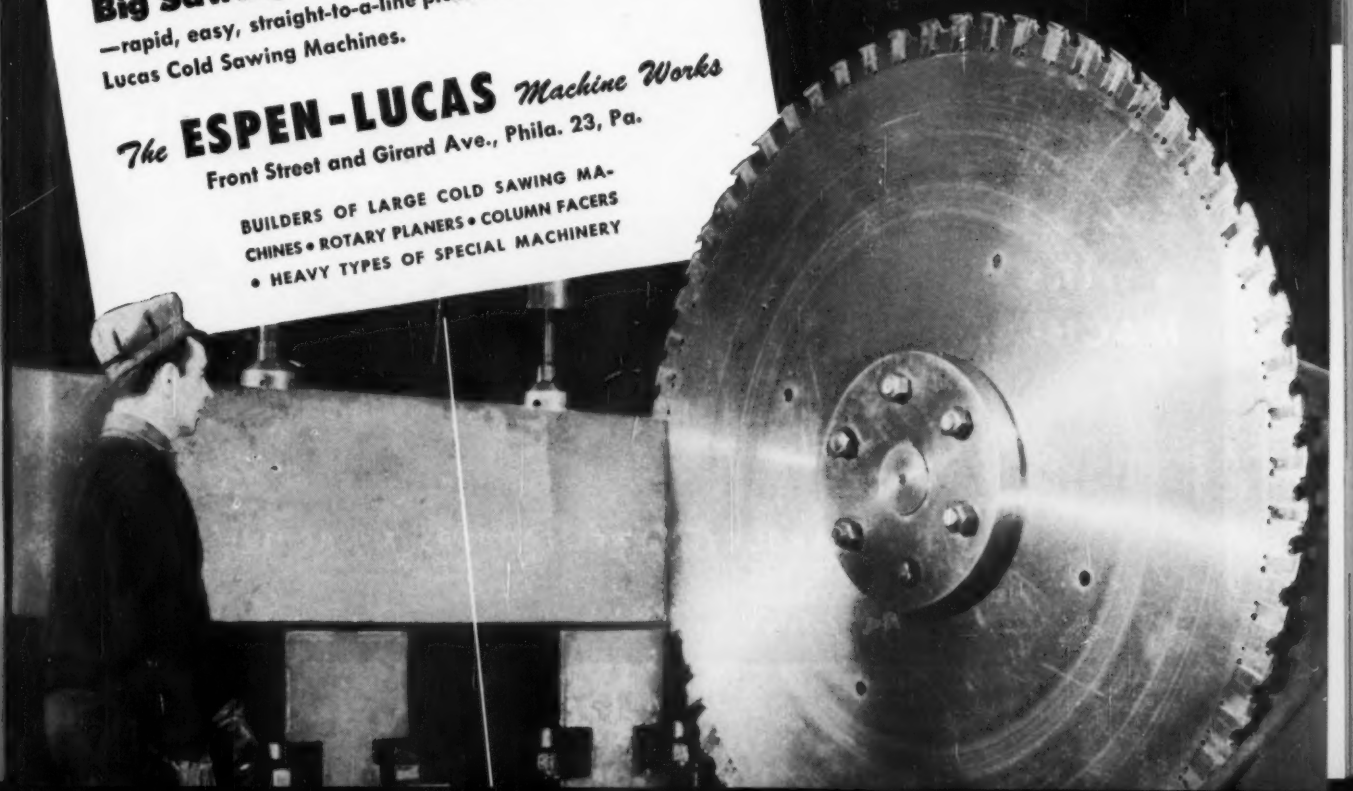
Saves Time... Cuts Costs

Rotary Planer . . . do milling jobs in one-third to one-seventh of time on an Espen-Lucas Rotary Planer.

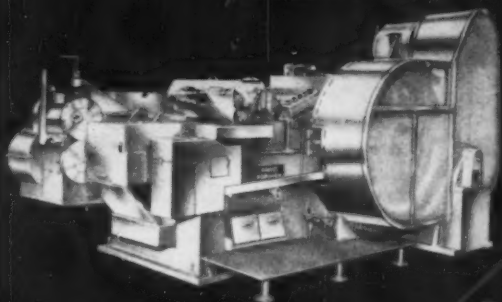
Big Sawing . . . production cutting of large stock—rapid, easy, straight-to-a-line piece after piece—on Espen-Lucas Cold Sawing Machines.

The **ESPEN-LUCAS** *Machine Works*
Front Street and Girard Ave., Phila. 23, Pa.

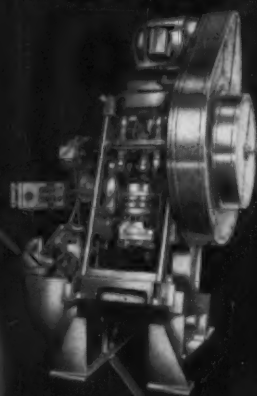
BUILDERS OF LARGE COLD SAWING MACHINES • ROTARY PLANERS • COLUMN FACERS
• HEAVY TYPES OF SPECIAL MACHINERY



**COLD HEADING
MACHINERY**



**POWER
PRESSES**



**EYELET, SLITTER
& WIRE
MACHINERY**

**ROLLING MILL
MACHINERY**



THE WATERBURY FARREL FOUNDRY & MACHINE CO.
DIVISION OF TEXTRON INC.
Waterbury, Connecticut • U.S.A.
Sales Offices: Chicago • Cleveland • Los Angeles • Millburn, N. J.

WF-54



"WEIRKOTE'S® SOMETHING SPECIAL! IT CAN END THE NEED FOR ANY FURTHER CORROSION PROTECTION AFTER FABRICATION."

Q. You mean it? Weirkote can save you the cost of any further processing for corrosion protection after fabrication?

A. Absolutely. It's the continuous process that does it. Integrates the zinc to the steel so tightly there's never any peeling or flaking. No matter how severe the fabrication—any torture test you put it through—that bond stays put!

Q. Hmmm. Weirkote sounds great. One thing—is its zinc coating uniform throughout?

A. To the nth degree! Even the hardest-to-reach areas on the most complicated fabrications are completely protected.

Q. Corrosion-protected, you mean?

A. Corrosion-protected all over! So much so that you can work Weirkote to the very limits of the steel itself. So there you have it: stepped-up manufacturing efficiency, sharply curtailed manufacturing costs. All from Weirkote!

Send for free booklet that details the time-and-cost-saving advantages of skin-tight zinc-coated Weirkote. Just write Weirton Steel Company, Dept. A-1, Weirton, West Virginia.

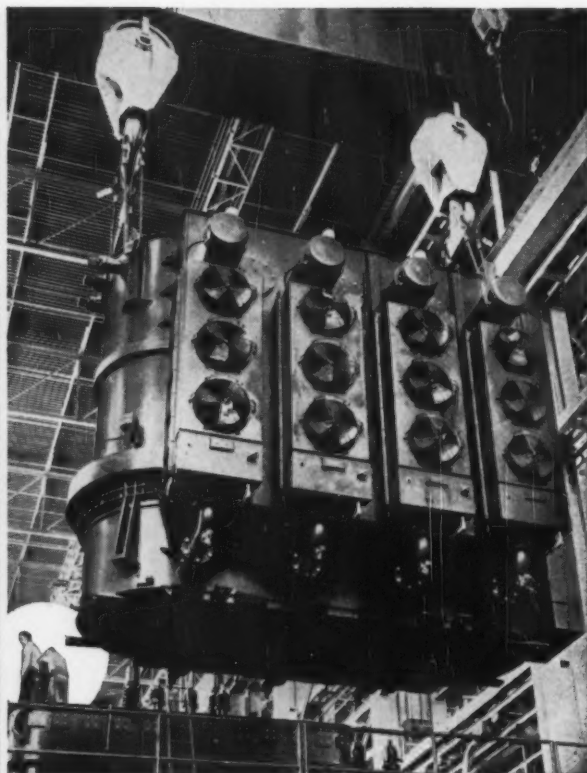


**WEIRTON STEEL
COMPANY**

WEIRTON, WEST VIRGINIA

a division of

NATIONAL STEEL CORPORATION

ACCOfor Better
Values**Acco Registered® Slings—Chain or Wire Rope****Why different loads require different slings**

Your rigger knows that different loads need different slings because of varying factors such as shape, weight, material, finish, protruding sharp corners, extremes of temperature.

On some jobs chain is best. On others the characteristics of wire rope make it the first choice. On still other jobs, wise riggers know that combinations of chain and wire rope will provide the greatest lifting economy.

No matter what type is called for, you can be sure of the safest slings and the best values in ACCO Registered Slings. From this one source you can get unbiased information based on actual know-how.



And you can get the exact slings your rigger should have.

One of the recent improvements is the new shaped Master Link now provided without extra cost on all ACCO Registered Slings, chain or wire rope. This link gives 18% greater resistance to distortion with no increase in weight. It is another reason why ACCO Registered Slings are recognized as the standard of efficiency and safety.

All ACCO Registered Slings are proof-tested, registered and identified for your greater assurance of safety.

...

Tell your distributor you'd prefer ACCO Registered Slings.

**WHAT
"ACCO REGISTERED"
MEANS**

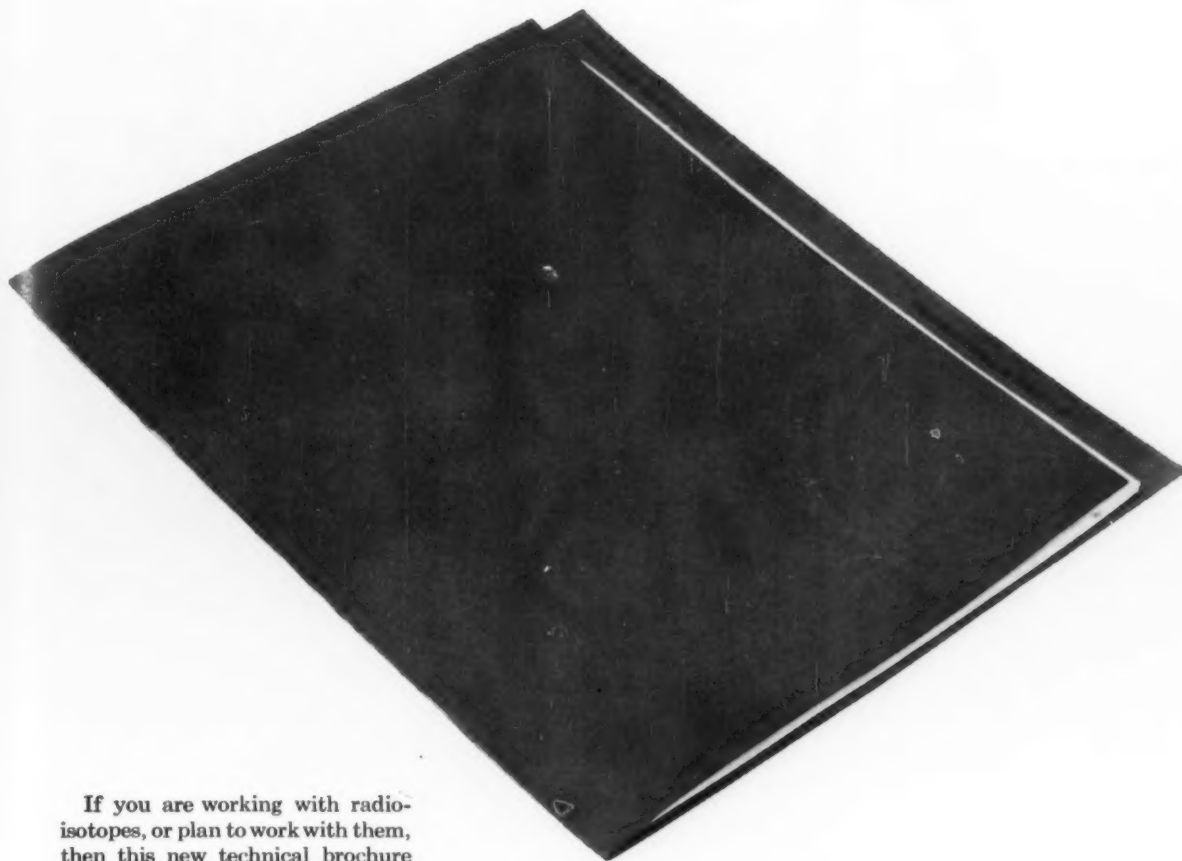
- 1 The best material
- 2 Unit safety factor (on bodies, rings, links, hooks)
- 3 Proof test of complete sling to twice the working load limit
- 4 Actual field service test of each design
- 5 Metal identification ring or tag on each sling
- 6 Signed Registry Certificate with each sling

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If you are working with radioisotopes, or plan to work with them, then this new technical brochure is a must for your files.

It gives needed facts and figures on the use of major radioisotopes . . . explains in detail half-lives, intensity, energy . . . and, describes how each of these characteristics affect exposure time and radiographic quality. It also presents basic exposure factors and compares the quality of radiographs made by exposure to x-rays and gamma rays.

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Gentlemen: Please send me a copy of "Radioisotopes In Industry". I am actively engaged in industrial X-ray work.

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Firm _____
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quick delivery

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you can count on Sheffield

You're assured fast delivery of Sheffield bolts, standard or special, when you call in your Sheffield man.

Why? Because Sheffield's completely integrated bolt plant is one of the world's largest. Here engineering know-how and productive capacity are teamed up to handle the toughest bolt problems. And to fill the biggest orders with on-time efficiency.

Along with this speed, you're assured top quality. Sheffield's quality control team checks and tests every step of manufacture from furnace to finished bolt. For the right bolts — right when you need them — call in your Sheffield man.

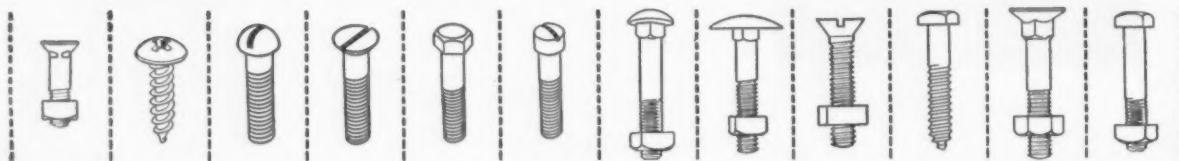
Bolt Makers Since 1888

SHEFFIELD DIVISION



ARMCO STEEL CORPORATION

OTHER DIVISIONS AND SUBSIDIARIES: Armco Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products





PITTSBURGH

presents -



**Combination
4 High / 2 High
Cold Mill...**

**Does the work
of two separate
mills**

"Precision" and "Versatility" are the words that best describe the new combination 2 High / 4 High Cold Mill designed and built by PITTSBURGH to secure precision gauge, temper and finish for the ferrous and non-ferrous industries. As a 4 High Mill, it is used for cold reducing; as a 2 High Mill, it is used to acquire the desired temper and finish. Several desirable design features are incorporated to keep roll change time to a minimum. Low initial cost and economical operation are attractive plus values.

Heavy Machining Facilities

Our plant is equipped with a superior complement of well diversified machine tools that are available on a continuing basis for economical machining of heavy castings or the manufacture of auxiliary rolling mill equipment, such as heavy mill tables, furnace pushers, slab depilers, downcoilers, ingot buggies, slab transfers, etc.



PITTSBURGH

ENGINEERING & MACHINE

Division of Pittsburgh Steel Foundry Corporation
P.O. BOX 986, PITTSBURGH 30, PENNSYLVANIA
PLANT AT GLASSPORT, PENNSYLVANIA

AVOID RISK **If
you
buy
steel...**

C. W. SMITH

USE OUR INVENTORY to cut your maintenance costs

To keep a general-store inventory of repair-type steel inflates your maintenance costs and ties up capital *uselessly*.

Many people are closing out this kind of dust-gathering inventory to put themselves in a better competitive position.

They buy from their Steel Service Center, use our technical know-how, get most stock cut-to-size . . . promptly.

It makes sense. Couldn't you save costs of storage, space, handling, cutting, wastage and obsolescence if you were to do the same thing? Couldn't you free

capital now tied up in inventory? Wouldn't you save in other ways, avoid big-inventory risks, yet still meet maintenance and repair deadlines?

Wouldn't you be in a better competitive position? Compare all your costs of possession for steel with what Service Center steel would cost you. Use the chart. Or get the booklet *What's Your Real Cost of Possession for Steel?* from your nearby Steel Service Center. American Steel Warehouse Association, Inc., 540 Terminal Tower, Cleveland 13, Ohio.



The American Steel Warehouse

...YOUR STEEL SERVICE CENTER

COST OF POSSESSION FOR STEEL IN YOUR INVENTORY	
Per ton delivered	_____
Cost of capital:	_____
Inventory	_____
Space	_____
Equipment	_____
Cost of operation:	_____
Space	_____
Materials handling	_____
Cutting & burning	_____
Scrap & wastage	_____
Other costs:	_____
Obsolescence	_____
Insurance	_____
Taxes	_____
Accounting	_____
TOTAL	_____
COST OF FREEDOM-FROM-RISK STEEL FROM YOUR STEEL SERVICE CENTER	
Per ton, cut-to-size, and delivered	_____
TOTAL	_____

SEMI-CONDUCTOR RECTIFIER



Two 100-kw, 250-volt silicon rectifiers installed in industrial service. Semi-conductor rectifiers are simple in operation and maintenance, require little floor space.



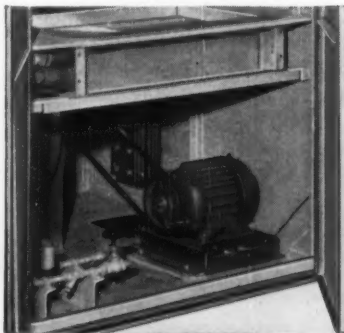
Only application experience like this can give you highest conversion efficiency

High power conversion efficiency at low cost is the major advantage of the semi-conductor rectifier. But this high efficiency — as high as 95% — can be obtained only when the unit is *correctly applied*.

Allis-Chalmers 30 years of experience in developing, manufacturing and *applying* rectifiers assures you of the highest conversion efficiency. This background of experience, plus vast research and engineering facilities, is available for a thorough analysis of your requirements. Then,

specific, unbiased equipment recommendations are made — dictated solely by your requirements — because Allis-Chalmers makes all types of rectifiers.

Every semi-conductor rectifier installed by Allis-Chalmers has performed to the complete satisfaction of the user. Your local A-C man can tell you how a semi-conductor rectifier can be applied profitably to your operations. Call him. Or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.

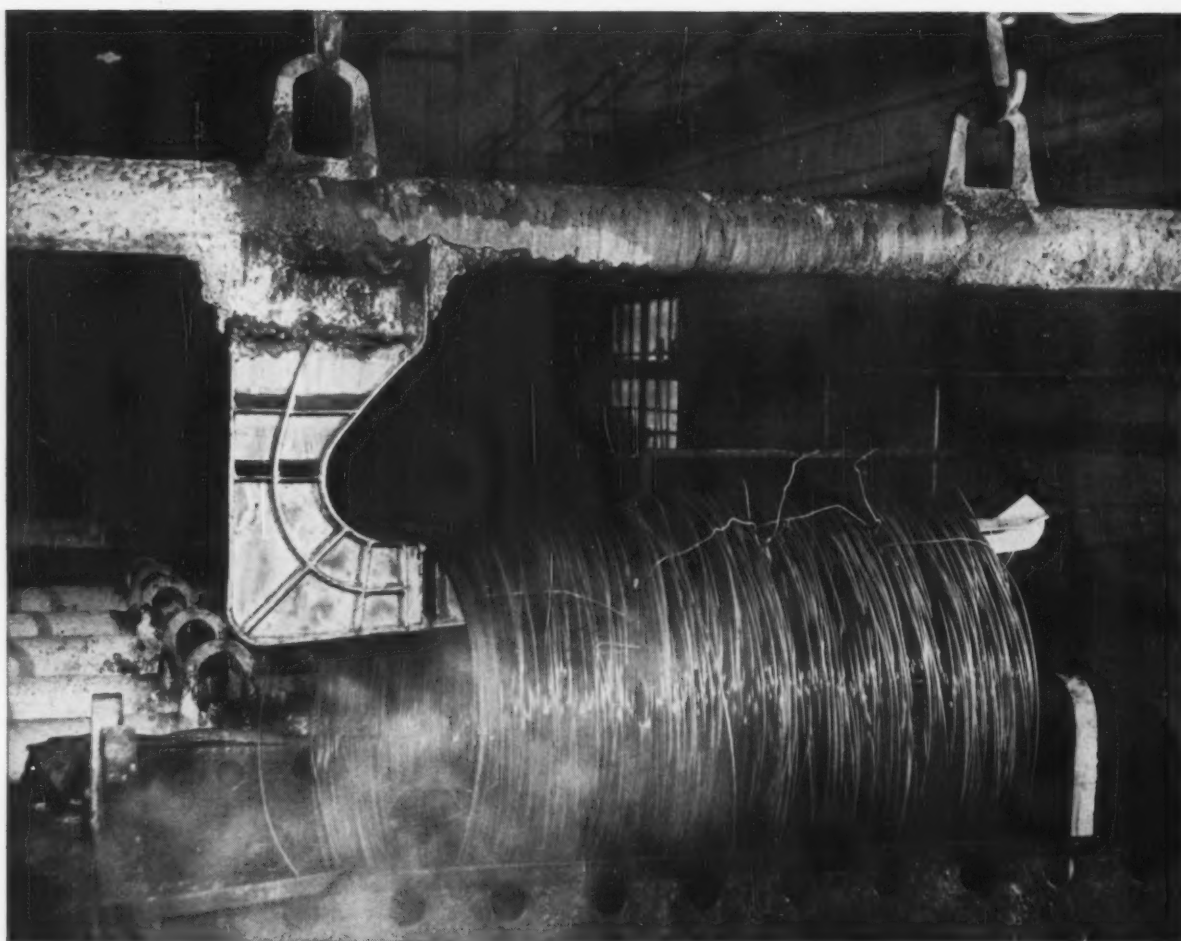


Effective cooling — closed recirculating air system features air-to-water heat exchange and delivers same amount of cooling air to each diode. Air is sealed in. Direct air cooling system also available.



ALLIS-CHALMERS

A-5817



Monel Pickling Hooks give improved service life at Colorado Fuel and Iron

Pickling hooks were a major problem for the Colorado Fuel and Iron Corporation. They corroded too fast.

So Colorado decided to try Monel* nickel-copper alloy pickling hooks. The result? The photo above gives you the answer. This hook has been on the pickling line five years, three shifts a day—yet you can see its excellent condition. Today, this Monel hook is expected to outlast predecessors by a wide margin.

Monel hooks last longer because Monel has excellent resistance to corrosion by sulfuric acid pickling

solutions. Monel alloy is strong and tough. In fact, it's the strongest non-ferrous metal you can use for pickling equipment.

Monel hooks save money other ways, too

This combination of strength and corrosion resistance saves money in several ways. Besides longer life, it permits greater payloads. And because Monel alloy is readily fabricated and welded, a hook can be quickly and economically repaired if it's damaged. Or it can be rebuilt to extend service life even further.

Improves other pickling equipment, too

Not only in hooks, but in *all* pickling equipment—slings, chains, bolts, tie-rods—Monel alloy can save you money . . . cut deadweight, outlast other materials. To get an idea of savings you can expect, write Inco for a copy of a useful 32-page handbook, "Equipping the Pickle House for Greater Production at Lower Cost."

*Registered trademark

The International Nickel Company, Inc.
67 Wall Street New York 5, N. Y.



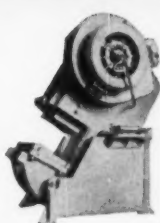
INCO NICKEL ALLOYS

TYPES AND CAPACITIES—MINSTER® PRESSES—A COMPLETE LINE

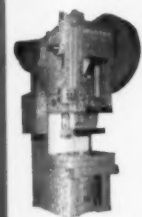
SINGLE POINT, GAP TYPE, OPEN BACK



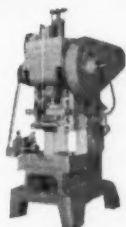
Series 1
Inclinable
6 Capacities
12 THRU 60 TONS
Bulletin Section 1



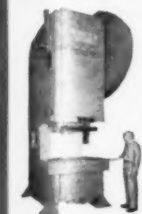
Series 1
Inclinable
Two Capacities
75 THRU 90 TONS
Bulletin Section 2



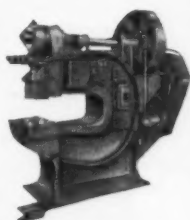
Series 70
Fixed Base
Four Capacities
45 THRU 90 TONS
Bulletin Section 3



Series B1
Fixed Base, Automatic
Five Capacities
16 THRU 60 TONS
Gap Press Bulletin

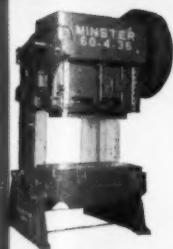


Series G1
Fixed Base or Inclinable
Four Capacities
75 THRU 250 TONS
Bulletin Series G1

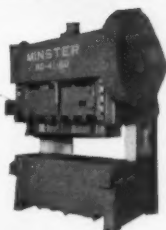


Series 20
Deep Throat Type
Three Capacities
15 THRU 35 TONS
Gap Press Bulletin

TWO POINT, GAP TYPE, OPEN BACK



Series 60
Inclinable—Five Capacities
22 THRU 75 TONS
6 Widths Ea. Cap.
Request Specifications



Series 80
Fixed Base—
Five Capacities
22 THRU 75 TONS
6 Widths Ea. Cap.
Request Specifications

STRAIGHT SIDE PRESSES



Series S1
Twelve Capacities
50 THRU 600 TONS
Bulletin Series S1

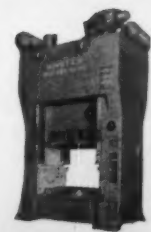


Series S2
Ten Capacities
50 THRU 400 TONS
Five Widths Ea. Cap.
Bulletin Series S2

STRAIGHT SIDE PRESSES—M SERIES

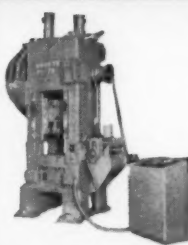


Series MS1
Three Capacities
300 THRU 500 TONS
Request Specifications

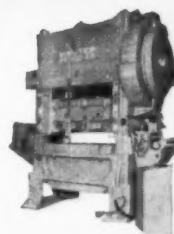


Series MS2
Five Capacities
150 THRU 500 TONS
Five Widths Ea. Cap.
Bulletin Series MS2

PIECE-MAKER AUTOMATIC PRODUCTION PRESSES



Series P1
Three Capacities
75 THRU 150 TONS
Bulletin Series P1

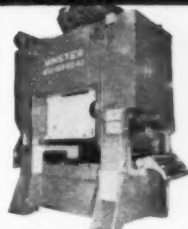


Series P2
Nine Capacities
20 THRU 300 TONS
Four Widths Ea. Cap.
Bulletin Series P2

KNUCKLE JOINT PRESSES

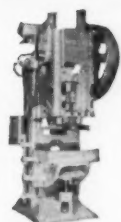


Series 90
Six Capacities
150 THRU 1000 TONS
Bulletin Series 90



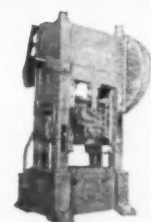
Series PMS2
Five Capacities
150 THRU 500 TONS
Five Widths Ea. Cap.
Request Specifications

HORNING PRESSES



Series 10
Eight Capacities
16 THRU 90 TONS
Bulletin Series 10

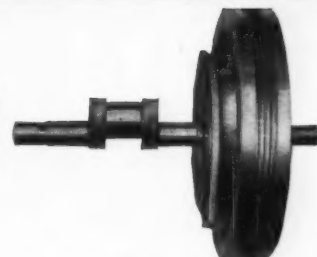
HEAVY DUTY BLANKER



40E-9
400 TON
Bulletin 40E-9

CLUTCH CONVERSIONS

Minster patented Combination Air Friction Clutch and Brake unit for clutch conversions increases production, reduces maintenance.
Bulletin CC57



MINSTER®

THE MINSTER MACHINE COMPANY

MINSTER, OHIO

FIRST IN PRESS DESIGN

MINSTER MACHINE COMPANY

MINSTER, OHIO

Gentlemen: Please send me a copy of Bulletin _____

Name _____ Title _____

Company _____

Address _____

City _____

Nature of Product _____

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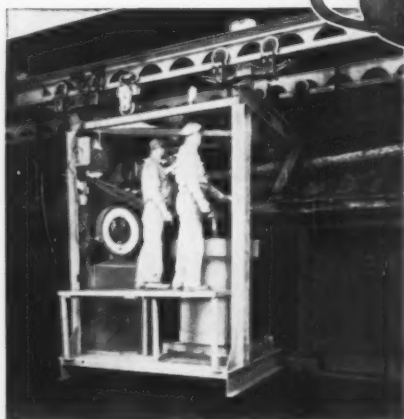
nc.
t. Y.

1959

A Simple Efficient Cupola Charging System

Serves Foundry Producing 45 Tons Castings Daily

Full charge buckets about 25 feet below on first floor are picked up with this cab-operated Tramrail charging carrier. No floor assistance is required because of special hoist hook. Immediately after charge is dumped into the cupola, the bucket is returned to charge accumulation area.



Materials from the various bins are gathered and placed directly into the charge buckets with this traveling car. The automatic recording scale is a permanent part of the car; it provides a permanent record of materials entering into all charges.

FOR 12 years a New England foundry has used a Cleveland Tramrail cupola-charging system for making up charges and delivering them to the cupolas. Although 40 to 45 tons of meehanite castings are produced per day, only three men are required for the work.

Two men work on a Cleveland Tramrail charge-gathering car that travels on a two-track runway alongside materials hoppers. They fill charge buckets placed on the car. Full buckets travel by gravity on a roller conveyor to a pick-up station. Here the third man, who operates the Cleveland Tramrail cupola charging carrier, lowers the hoist hook from the floor above and picks up the buckets. These are delivered to one of the two cupolas and materials discharged through the bucket bottoms.

Only three charging buckets are required, yet nine tons are melted per hour. The system has proven fast, efficient and easy to maintain.

CLEVELAND  TRAMRAIL

Overhead Materials Handling Equipment
Write for free booklet 2008

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 4849 East 286th Street • WICKLIFFE, OHIO



HYATT MADE IN U.S.A.

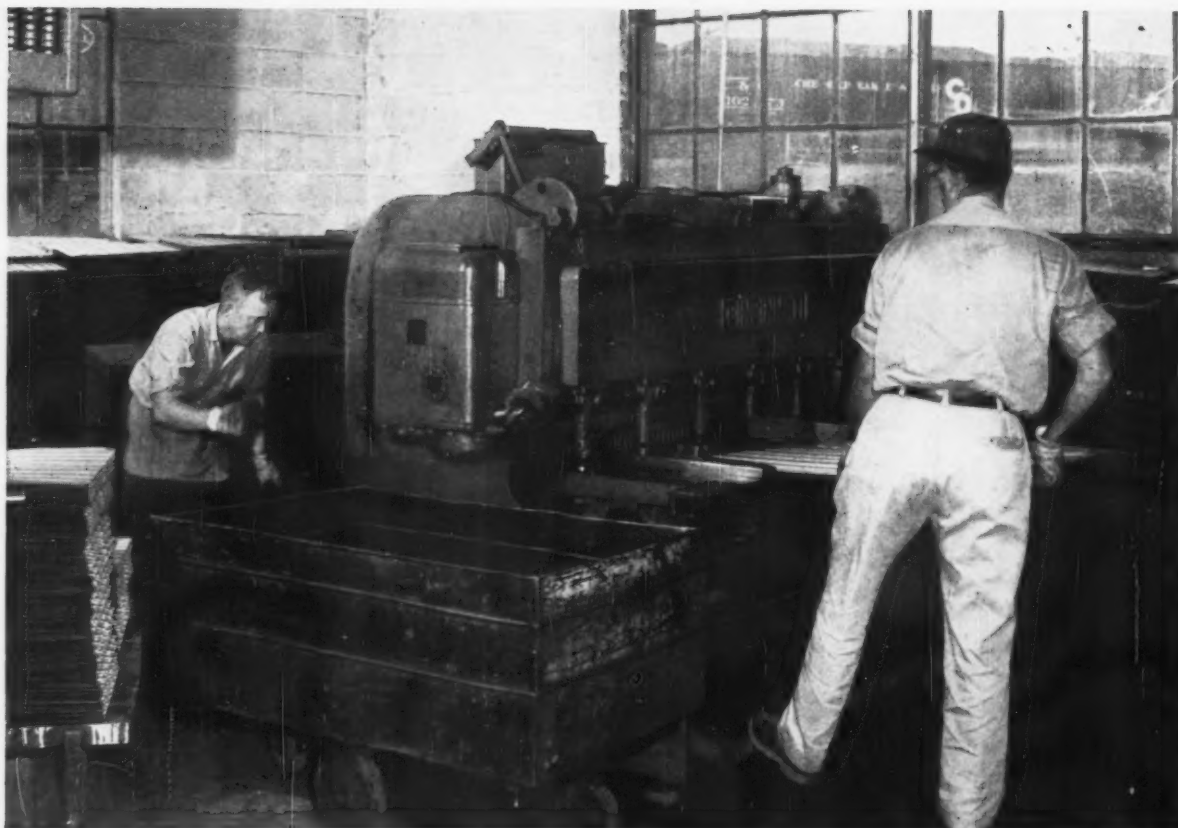
**UNERRING ELECTRONIC CONTROLS
ASSURE ROLLER BEARING QUALITY
NEVER BEFORE ACHIEVED IN QUANTITY!**

Ultra-precise control of internal diameters and clearances helps HYATT Hy-Rolls run smoother, last longer, prevent troubles due to excessive heat and vibration frequently generated by inferior bearings. *For maximum performance per bearing dollar, insist on . . .*

HYATT **HY-ROLL BEARINGS**
FOR MODERN INDUSTRY

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

NO BEARINGS carry radial loads like cylindrical bearings . . .
and **NOBODY** knows them like **HYATT**



PRODUCTION: 10,000,000 cuts
MAINTENANCE COST: \$896⁰⁰

This Cincinnati® Shear has been in constant service for ten years, cutting 18-gauge corrugated sheet, 1010 draw quality, for a prominent heating equipment manufacturer at an average rate of 4000 cuts a day. That adds up to more than a million strokes per year—or 10,000,000 strokes in ten years.

Accuracy has always been excellent. The machine has been "down" *only for blade changes*. Special blades are used in this operation, to eliminate distortion of the corrugations.

Cost of machine maintenance, including blade resharpening, has been \$896.00 for the entire ten years. "This," says their production manager, "to my way of thinking, is very good performance." We agree. Yet this is not exceptional. Every Cincinnati® Shear is built to provide this kind of dependability and low maintenance, and we have hundreds of case histories to prove the point.

Specify Cincinnati® for all your shear requirements. Write Department B for Catalog S-7R.

Shapers / Shears / Press Brakes

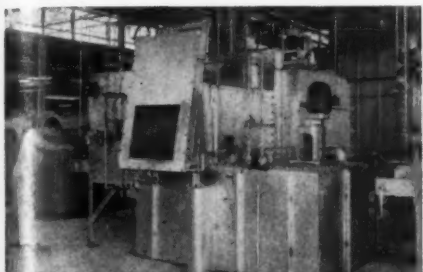
THE CINCINNATI
SHAPER co.



Cincinnati 11, Ohio, U.S.A.

WHEN IT COMES TO HEAT TREATING— “Do-It-Yourself” can sometimes be costly

Buying equipment and supplies to perform heat treating operations within your own plant is only one step in many that must be considered when contemplating the installation or expansion of a heat treating department.

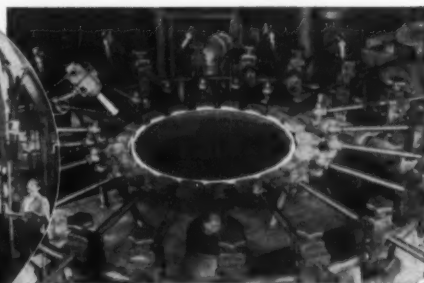
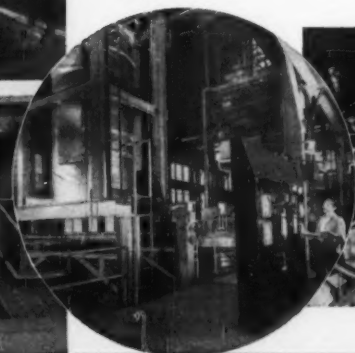


Here are some of the factors that should be included when figuring the cost of operating your own heat treating department—of “doing-it-yourself” when it comes to heat treating:

- **Technical skill:** Trained operators whose skill is the result of years of experience are essential
- **Maintenance:** Rapid deterioration of equipment occurs unless there is constant repair, maintenance, and skillful handling of the equipment
- **Quality control:** Testing equipment and skilled operators are necessary to maintain uniformity and quality control of all heat treating operations
- **Sufficient equipment and supplies:** A great variety of equipment is needed to meet the requirements of annealing, brazing, hardening, carburizing, stress relieving, nitriding, and all other heat treating processes; and an endless variety of materials and supplies must be kept on hand.

These problems and many more have been solved by commercial heat treaters. They have the answers because heat treating is their business.

Every MTI commercial heat treater listed here is a specialist with complete service facilities under one roof. Each one has the facilities, equipment, skill and experience which will enable him to meet your most exacting heat treating requirements.



Consult one of these HEAT TREATING SPECIALISTS

American Metal Treatment Co.
Elizabeth, New Jersey

Anderson Steel Treating Co.
Detroit, Michigan

Benedict-Miller, Inc.
Lyndhurst, New Jersey

Bennett Heat Treating Co., Inc.
Newark 3, New Jersey

Cook Heat Treating Co. of Texas
Houston 11, Texas

The Dayton Forging & Heat Treating Co.
Dayton 3, Ohio

Dominy Heat Treating Corp.
Dallas, Texas

Drever Company
Bethayres, Pennsylvania

Greenman Steel Treating Company
Worcester 5, Massachusetts

Fred Heinzelman & Sons
New York 12, New York

Alfred Heller Heat Treating Co.
New York 38, New York



Hollywood Heat Treating Co.
Los Angeles 38, California

Ipsenlab of Rockford, Inc.
Rockford, Illinois

Ipsenlab of Canada Ltd.
Toronto, Ontario

L-R Heat Treating Co.
Newark, New Jersey

The Lakeside Steel Improvement Co.
Cleveland 14, Ohio

Metallurgical, Inc.
Minneapolis 14, Minnesota

Metallurgical, Inc.
Kansas City 8, Missouri

New England Metallurgical Corp.
South Boston 27, Massachusetts

Owego Heat Treat, Inc.
Apalachin, New York

Paulo Products Company
St. Louis 10, Missouri

Pittsburgh Commercial Heat Treating Co.
Pittsburgh 1, Pennsylvania

The Queen City Steel Treating Co.
Cincinnati 25, Ohio

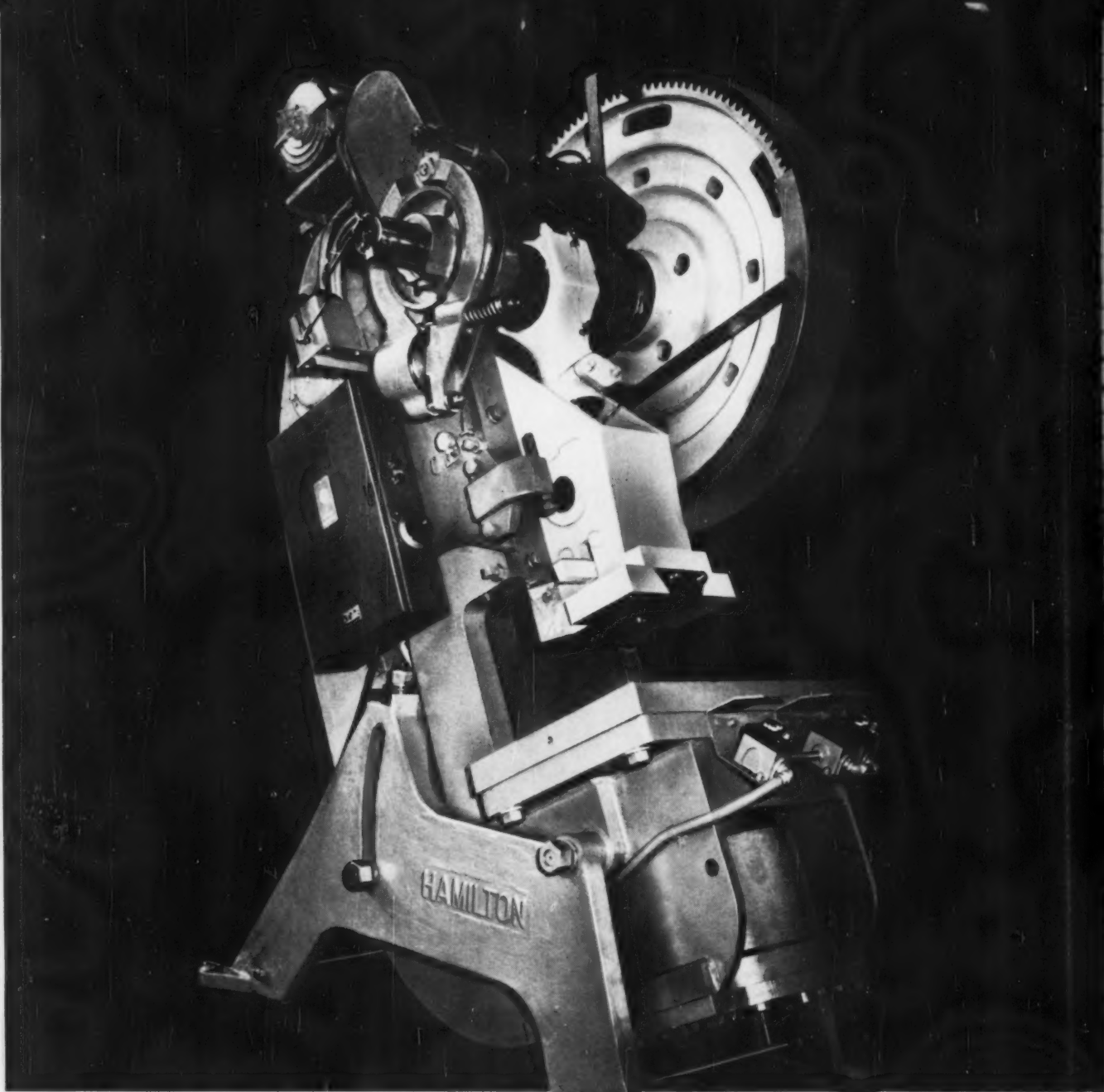
J. W. Rex Company
Lansdale, Pennsylvania

Stanley P. Rockwell Company
Hartford 12, Connecticut

Scott & Son, Inc.
Rock Island, Illinois

Syracuse Heat Treating Corp.
Syracuse, New York

Temperature Processing Co.
North Arlington, New Jersey



INTRODUCING!

New Hamilton open-back inclinable presses

Special features of Hamilton OBI Presses include stress-relieved welded steel design — lowers deflection so that up to 50% more stampings can be produced before dies require regrinding; disc-type air clutch, mounted on the crankshaft, to permit low-

inertia starting with reduced heat generation; special air-released, spring-actuated brake for maximum efficiency and production speed with low heat loss; extreme stability and wearing qualities made possible by a wrist pin and crosshead type connection.

Write to Dept. 2-A for Bulletin 13302

Hamilton Division Hamilton, Ohio
BALDWIN · LIMA · HAMILTON

Diesel engines • Mechanical and hydraulic presses • Can making machinery • Machine tools





Lima Type 24-T Jobmaster Truck Crane handling scrap in yard of Buckeye Foundry, Cincinnati, Ohio. The versatile crane is equipped with a 28-ft. boom and employs a hook, $\frac{1}{2}$ -yd. clamshell, or 3000-lb. magnet, depending on the job.

"LIMA Jobmaster saves 20 man-hours on just one car-unloading operation"

reports Buckeye Foundry, Cincinnati, Ohio

Buckeye Foundry, manufacturer of castings for the machine tool industry, bought a Lima Type 24-T Jobmaster Truck Crane in mid-1957 to speed up materials handling.

Al Huth, plant maintenance engineer, says: "We use the crane for handling pig iron, sand, scrap and flasks, and it has proved to be a very profitable investment. Formerly the materials-handling jobs were done by a crew of 18 men, and it was a lot of hard, brutal work 8 hours a day. Now the crane works only 7 hours a day, and our work force has been reduced to four men. The crane can unload 300 tons of pig iron a day, or 60 to

65 truckloads of sand. It used to take three men 8 hours to unload a carload of sand. With the Lima, it now takes two men 2 hours to do the same job. Unloading a carload of pig iron previously meant two men for 8 hours. With the Lima, it now takes only two men 1 hour."

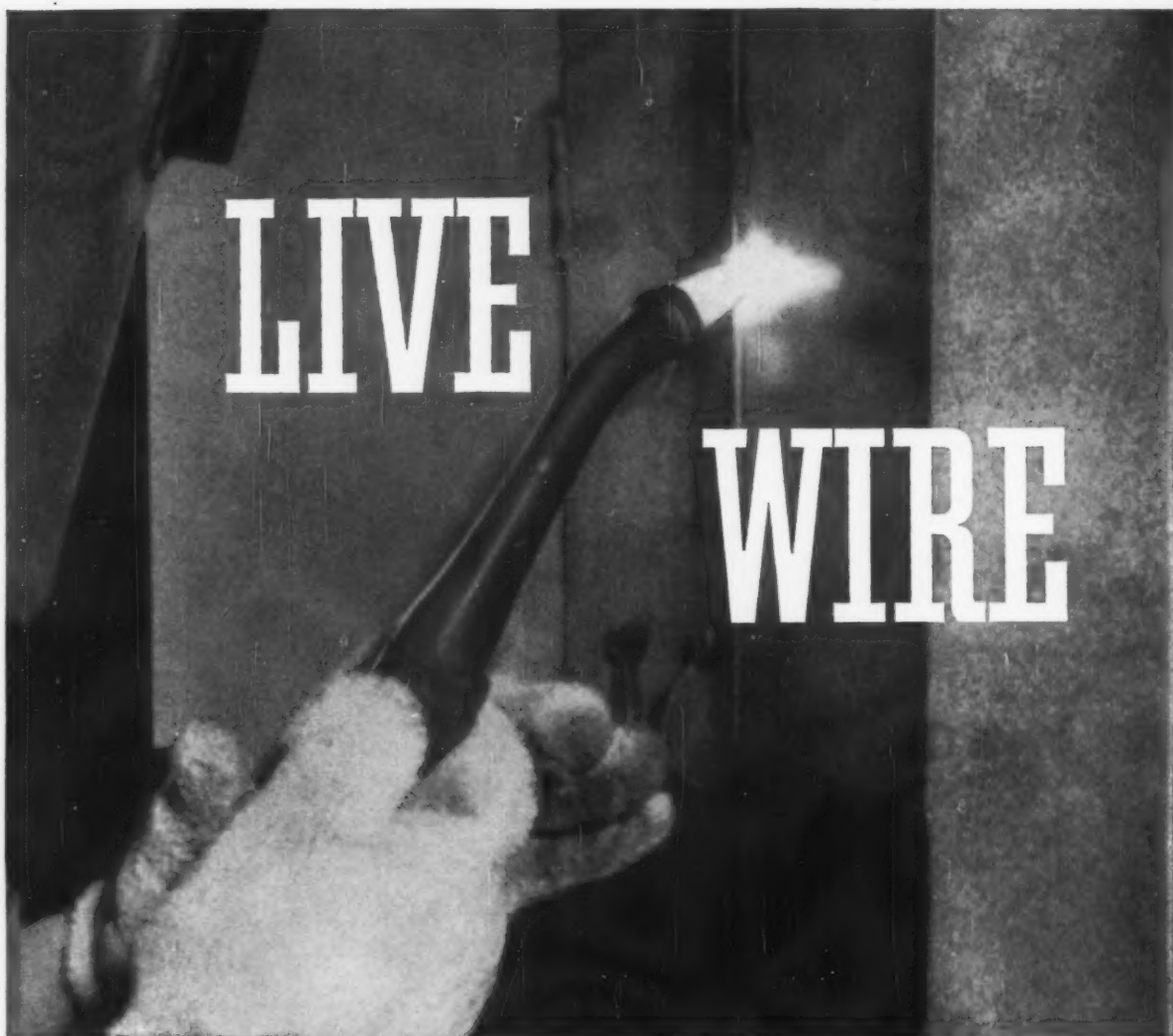
If you have a materials-handling problem, it will pay you to check the complete line of wagon, truck and crawler-mounted Limas . . . designed and built with the quality that saves you time and money on every job. See your nearby distributor or write Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Lima, Ohio.

DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

LIMA Construction Equipment Division, Lima, Ohio
BALDWIN · LIMA · HAMILTON

Shovels • Cranes • Draglines • Pullshovels • Roadpackers • Crushing, Screening and Washing Equipment





New design in Sigma hand welding torches

Here is a new, lightweight torch—only 16 ounces—for manually welding light-gage steels. Sigma ST-2 welds in all positions with no change in control or current settings. Welds .030- to .100-in. sheet, using low-voltage short-arc technique with .020- and .030-in. hard-drawn wire. For 200 amp continuous service.

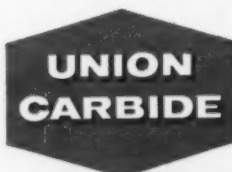
Balanced design makes handling easy. Service lines enter through rear of handle—a convenience in cramped quarters. Start-stop switch on handle, easy to reach. Nozzle has a 60° curve for maximum weld visibility.

Sigma ST-2 makes high-quality welds at high speed. Seams require no cleaning... dis-

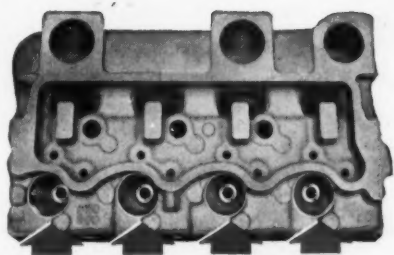
tortion is at a minimum. Inert gas shielding is economical. Low flow rate—only 10 cu. ft. or less per hour—means even more savings.

Call your nearest LINDE office today for a demonstration of this new Sigma ST-2 torch! Or write Dept. I-11, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N.Y. Offices in other principal cities. In Canada: Linde Company, Division of Union Carbide Canada Limited.

Linde
TRADE-MARK

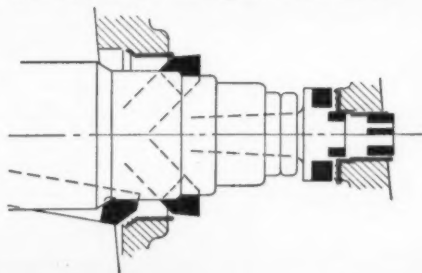


"Linde" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.



MACHINES 21 CYLINDER HEAD SURFACES IN ONE PASS WITH DEPTH OF CUT BETWEEN $\frac{1}{8}$ " AND $\frac{3}{16}$ "

Rough castings are bored, plunged and chamfered at a rate of 18 parts per hour. Tooling is shown below.



NEW!

Heavy-Duty Precision Boring Machine

From base to bridge-top, Ex-Cell-O's new Style 771 Precision Boring Machine is engineered to keep pace with changing production needs and built to give years of precise profitable performance.

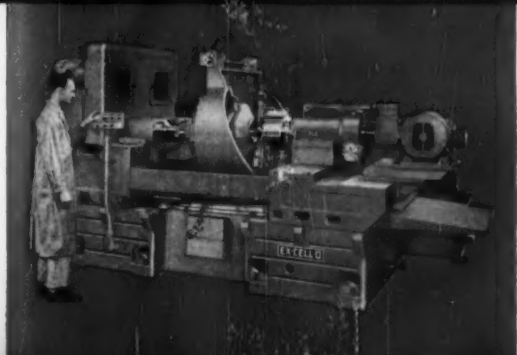
A specialist in fast, heavy-duty work such as the multiple machining operations detailed at left, the Style 771 (and the companion double-end Style 772) provides ample work space for complex tooling setups and bulky fixtures.

In-built versatility permits a broad range of rough, semi-finish and finish operations with automatic cycling. Rigid construction gives the "beef" needed for machining large, heavy parts, and supplies a wide margin of steadiness for high production of smaller precision parts.

Ex-Cell-O Precision Boring Machines can put greater precision into your products at lower per-unit cost. Get the full story from your local Representative, or write direct.

RIGHT: Style 771 machines both 4-and-6-cylinder tractor components. As cycle starts, table rapids to left, spindles rotate and feed traverse begins. At end of stroke, table rapids out to clear tooling; fixture indexes, cycle repeats for second set of holes.

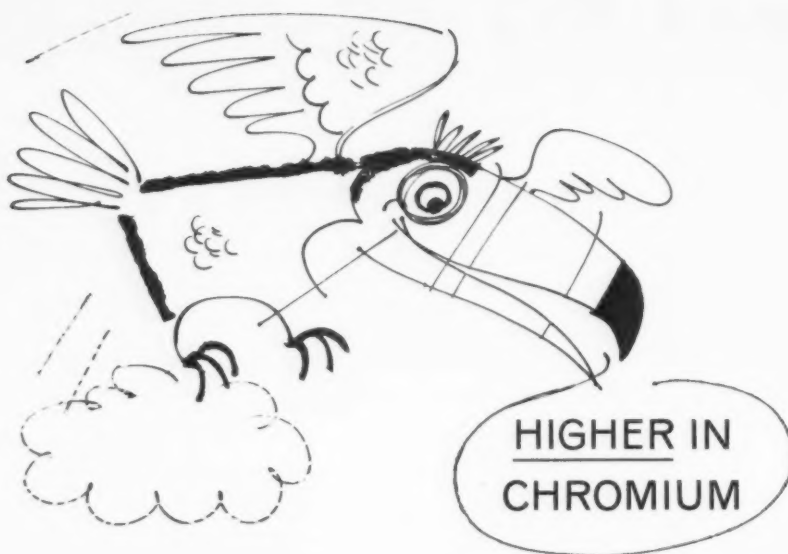
BELOW: Double-end Style 772 performs multiple machining operations on tractor gear case cover.



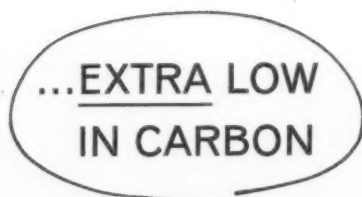
(XLO) EX-CELL-O FOR PRECISION

EX-CELL-O Machinery
CORPORATION Division
DETROIT 32, MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • TORQUE ACTUATORS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT



EXLO[®] 75



Now, from VCA's integrated, mine-to-mill facilities, come two new members of the EXLO ferrochromium family, with higher-than-ever chromium content (75% minimum) for use in very low carbon stainless steels and heat-resistant alloys. EXLO "75" is particularly adaptable to vacuum melting...and to other processes where maximum cleanliness is a *must*! Two grades of EXLO "75" to choose from:

Max. .015% Carbon Grade

Chromiummin. 75%
Carbonmax. 0.015%
Siliconmax. 0.75%

Max. .025% Carbon Grade

Chromiummin. 75%
Carbonmax. 0.025%
Siliconmax. 0.75%

AND BEAR IN MIND the *regular* EXLO grades for use in low carbon stainless and heat-resistant steels, irons and alloys. These, like all EXLO ferrochromium alloys, have high density and exceptional cleanliness.

Max. .025% Carbon Grade

Chromium68/73%
Carbonmax. 0.025%
Siliconmax. 0.75%

Max. .05% Carbon Grade

Chromium68/73%
Carbonmax. 0.05%
Siliconmax. 0.75%

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Cut disconnect-reconnect time by as much as 50%

The FALK Spacer Coupling is specially designed for quick installation or removal *without disturbing the driving or driven unit*. This feature can save you up to 50% in disconnect-reconnect time when critical equipment—a process pump, for example—needs repair or replacement.

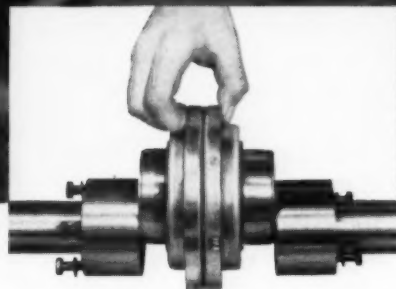
Here's another saving: with the FALK Spacer Coupling, you can quickly realign shafts *without the usual loss of operating temperature!*

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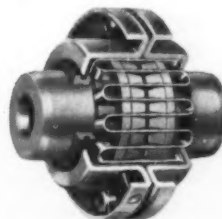


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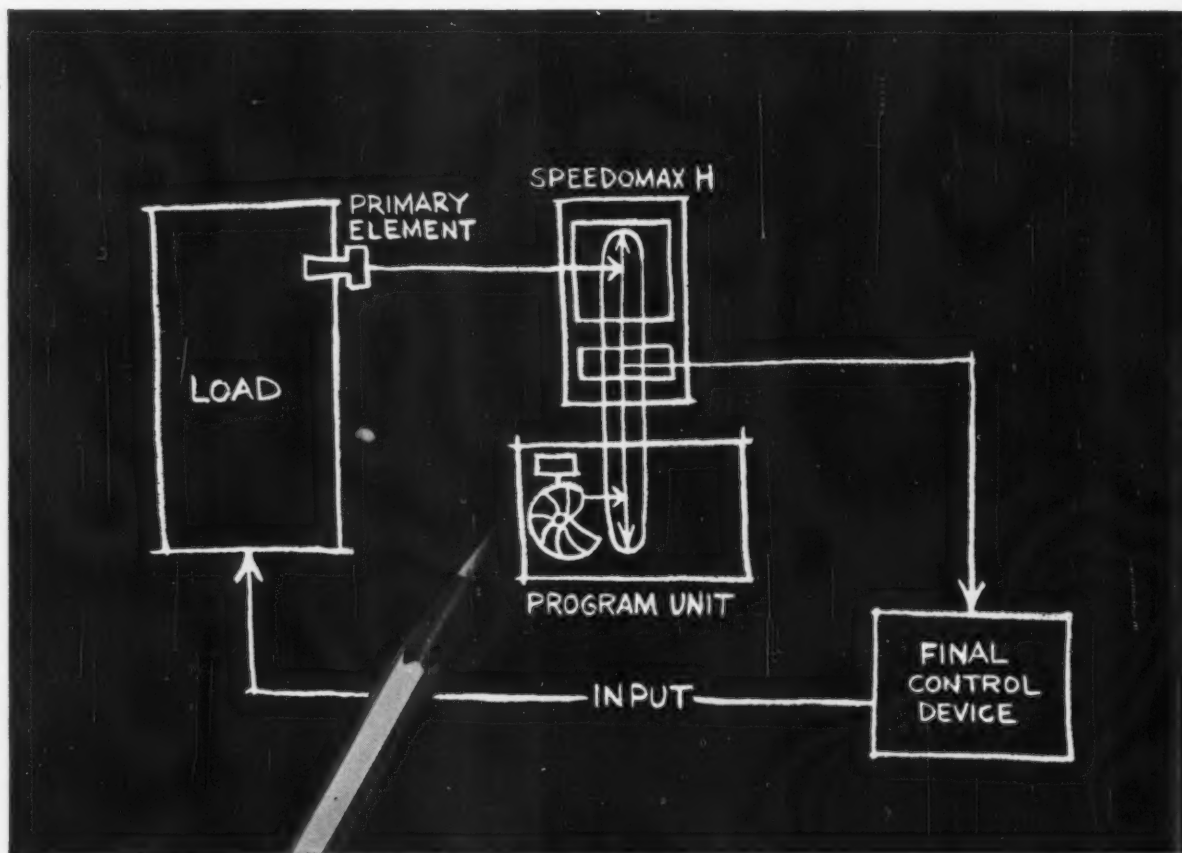
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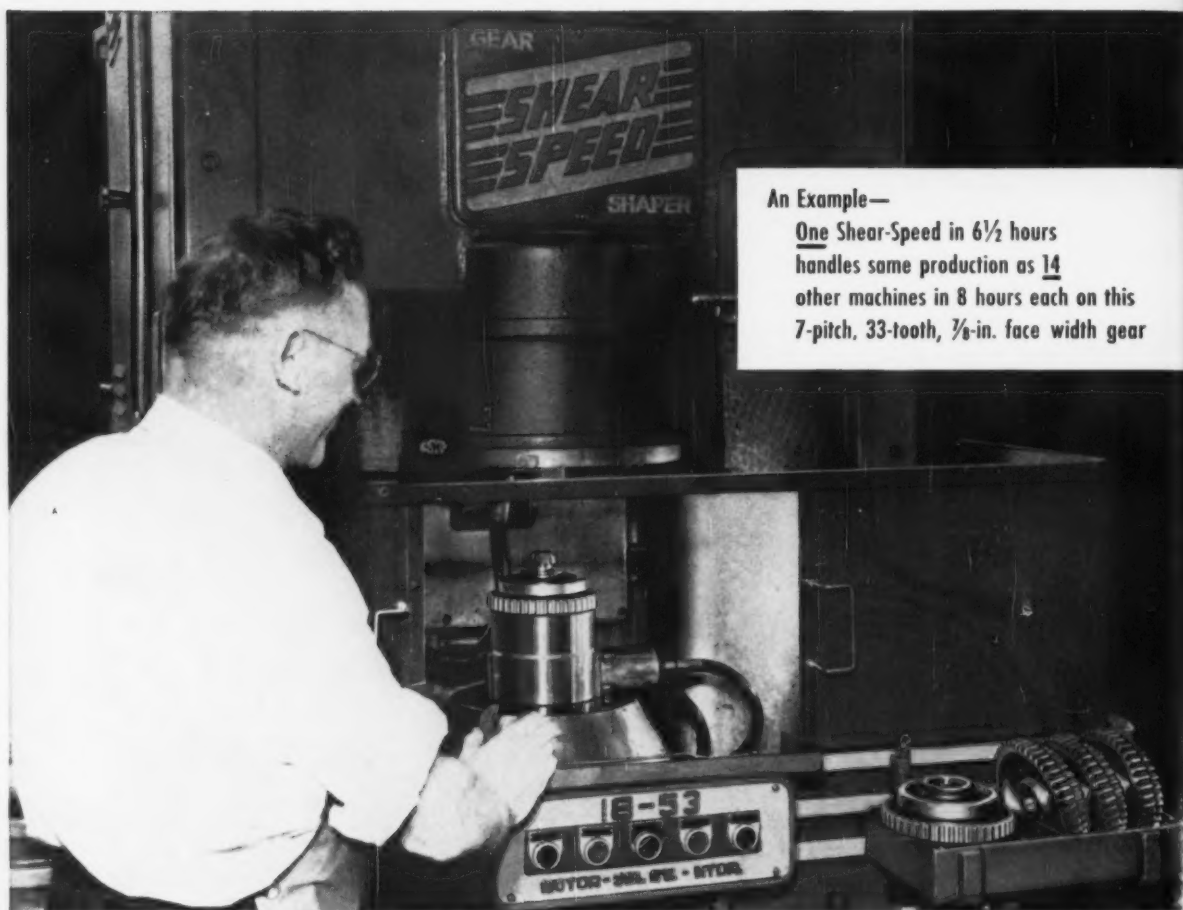
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THE IRON AGE, January 1, 1959

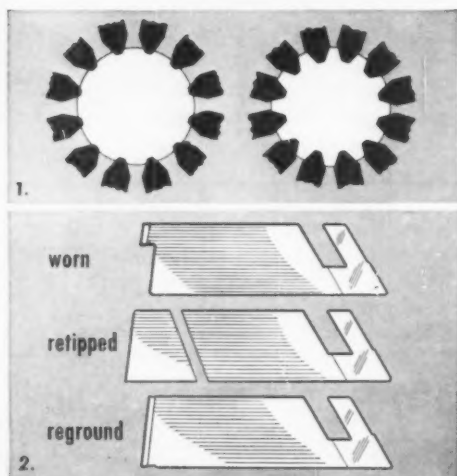
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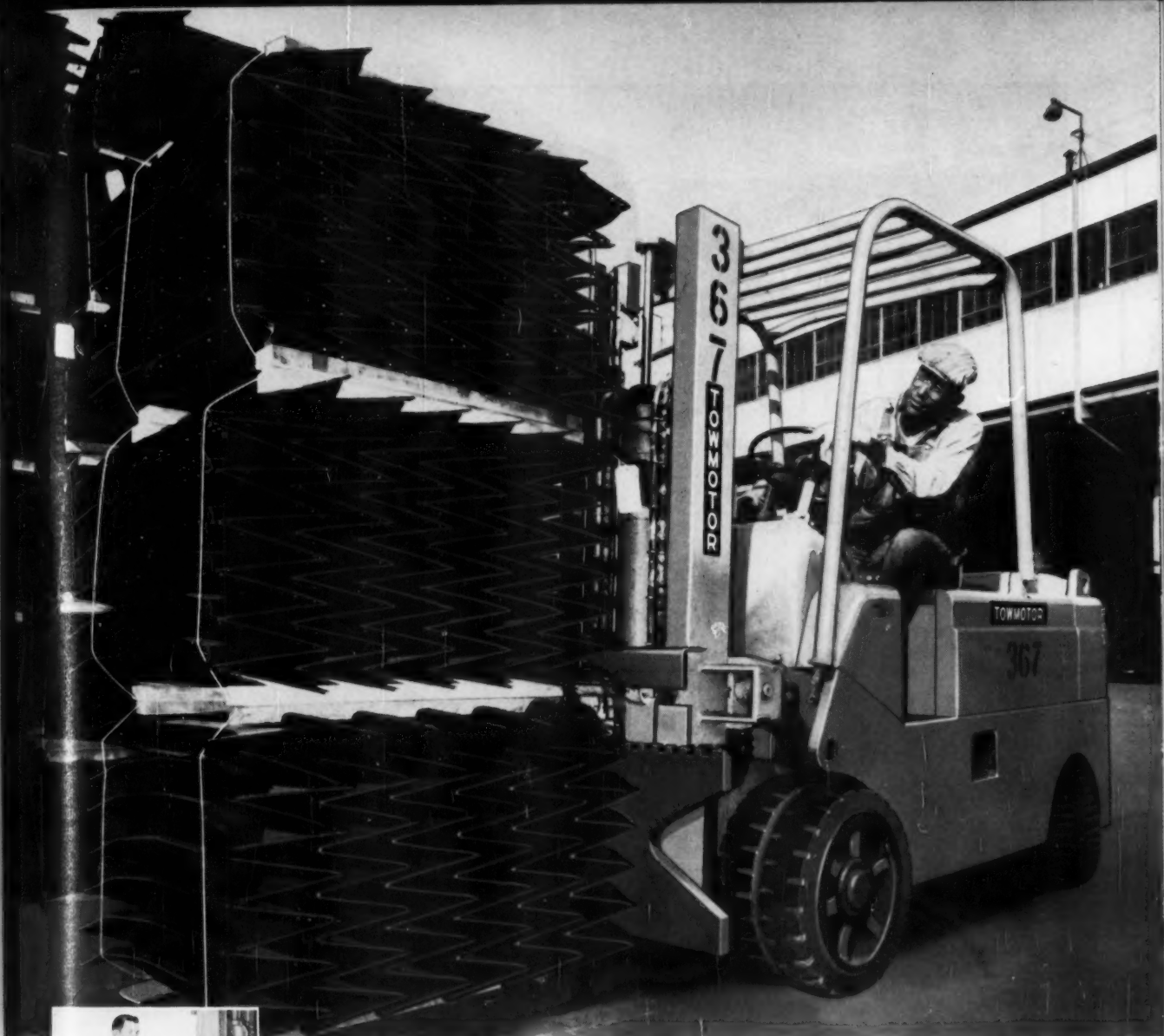
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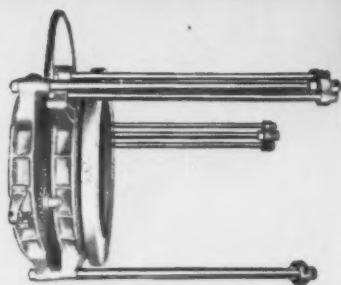
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on large gas mains



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sightless operator uses saw to FULL CAPACITY!

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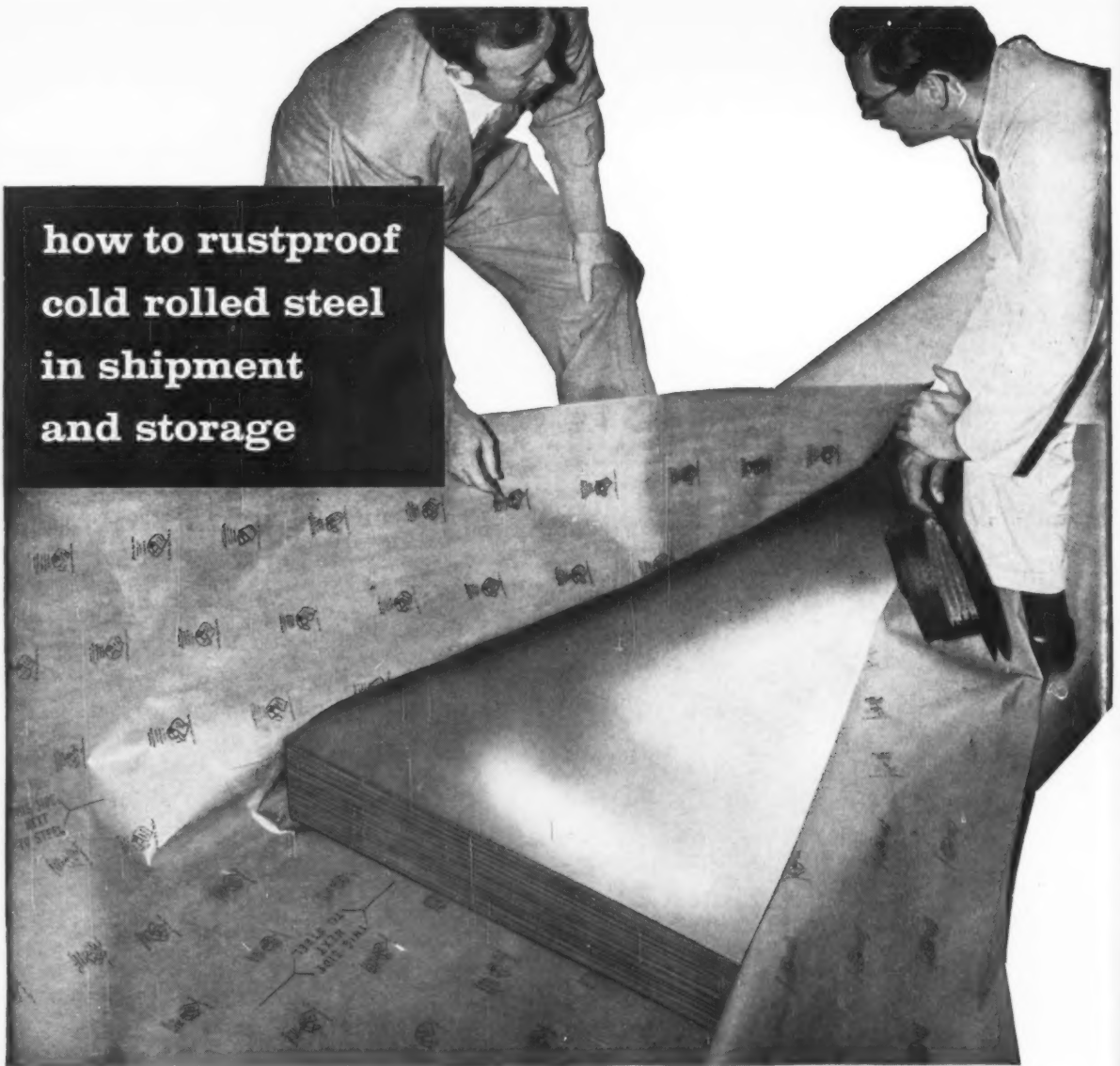
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Proved by actual test! Unwrapped steel rusted within a few hours. Identical steel wrapped in Ferro-Pak showed no signs of rust . . . even after several months. Non-toxic chemical vapors from Ferro-Pak coat the steel with an invisible film that makes it impossible for rust to get the slightest foothold.

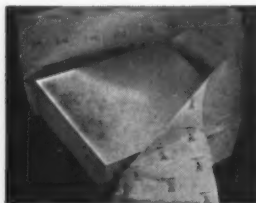
Even under adverse conditions, such as outside storing or shipping, Ferro-Pak provides complete protection. It is waterproof, strong,

yet highly flexible and easy to handle. The chemical rust inhibitor is compatible with oil and stays effective for long periods even when the humidity soars.

Whether you're a shipper or a buyer of steel, it will pay you to specify Ferro-Pak wrapping wherever rust is a problem. For an interesting idea brochure on many uses for Ferro-Pak, write Cromwell Paper Company, 4805 South Whipple Street, Chicago 32, Illinois.



How to rustproof a freight car—Ferro-Pak is used to line sides of car and to interleave coils, transforming ordinary freight car into huge rustproof package.



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Second of a New Series of Quarterly Surveys,
Conducted for The IRON AGE
by the National Industrial Conference Board, on:

METALWORKING

Capital Appropriations

What 988 Major Plants Report
On Industry's Latest Spending Plans

How Metalworking Reacts to Business Upturn

All Metalworking—Responding to increased sales, metalworking's third quarter appropriations for new plants and equipment rose 25 pct from the second quarter levels. Also, it is 17 pct higher than the same period a year earlier. Appropriations per worker come to \$716.

Primary Metals—Third quarter appropriations were almost double second quarter rates. Appropriations per worker in this category are the highest in all metalworking groups. **P. 112**

Fabricated Metals—Improvements in fabricated structural products and stampings led this group to increases in appropriations over the second quarter and also over the year-ago rate. Appropriations by the fabricated metals industries were higher than the average for all metalworking. **P. 113**

Nonelectrical Machinery—A slight lag from the second quarter occurred. But the rate of appropriations is up from a year ago. Farm equipment shows the biggest annual gain. **P. 114**

Electrical Machinery—Capital spending plans are down from the second quarter, but about even with the rate of a year ago. **P. 115**

Transportation Equipment—The decline in spending is leveling off. Automotive and aircraft declines hurt totals. **P. 115**

Instruments—Downtrend in capital spending was reversed in the third quarter. But year-to-year totals are lower. **P. 116**

An Overall Look at Metalworking's Spending Plans

Industry	SIC Code	Capital Appropriations—\$ Millions								Pct Change	Pct Change	Appropriations per Worker ¹
		1957				1958				1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1958 to 3rd Qtr. 1957
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.				
Metal Furniture.....	25	\$2.2	\$1.0	\$4.9	\$1.4	\$1.5	\$1.0	\$1.0	-56 Pct	-80 Pct.		\$445
Primary Metals.....	33	309.8	341.1	125.8	196.8	100.0	80.1	168.5	-55	34		1215
Fabricated Metal Products.....	34	50.1	45.0	25.5	38.8	27.7	25.3	33.0	-29	29		621
Machinery (except Electrical).....	35	229.1	150.1	58.1	87.7	90.4	69.8	60.7	-49	4		888
Electrical Machinery and Equipment.....	36	71.9	30.7	23.2	34.6	38.3	33.7	23.5	-24	1		495
Transportation Equipment.....	37	232.7	138.4	72.9	179.8	135.4	68.5	62.4	-40	-14		468
Instruments, etc.....	38	12.6	7.1	5.9	6.7	7.2	4.2	5.7	-33	-3		433
Total Reported by Metalworking ²		\$908.4	\$713.4	\$315.8	\$545.8	\$400.5	\$262.6	\$345.8	-46	12 Pct		\$695
Total Estimated for All Metalworking ³		\$1,574.0	\$1,270.0	\$571.0	\$934.0	\$680.0	\$533.0	\$668.0	-45	17 Pct		\$716

Based upon returns from 392 companies reporting 566 separate industry groups.

¹ In dollars per production worker.

² Excludes ordnance and accessories (SIC code 19) and miscellaneous metal manufacturing (SIC code 39).

SOURCE: The National Industrial Conference Board.

³ Estimated for universe described in Table 2. This includes metalworking companies with at least one plant of 500 production workers or more in 1957. Calculated by dividing reporting companies' appropriations in each quarter by the coverage ratios indicated in Table 2. A total of 988 plants with 500 or more workers reported.

Capital Spending Is on the Rise

Four Major Metalworking Groups Show Gains

Spending for new plants and equipment took a turn for the better in third-quarter '58.

Capital appropriations by metalworking companies rose to \$668 million—up 25 pct from the previous quarter.

■ Capital appropriations reported by metalworking companies for the third quarter last year have set the stage for a comeback by the durable goods industries in 1959.

Appropriations approved by metalworking companies in this period rose to \$668 million. This is higher than both the previous quarter and the same quarter a year earlier, as shown in table above.

Quick Response—The upturn in appropriations represents a quick response to the rise in overall business activity by the durables manufacturing industries. It suggests that despite some problems created by "excess" capacity built up during 1955-57, many important investment outlets are still available.

Given a rise in sales and profits, the survey shows, many metalworking companies had carefully-considered projects available and ready for approval.

The reported capital appropriations for the third quarter of 1958 were 12 pct higher than the same period a year earlier. Not only that but they were also up from the second quarter of 1958. By contrast, appropriations fell sharply in

second- and third-quarter 1957.

Four Groups Up—Of the seven major metalworking categories, shown in the above table, four reported approvals higher than a year previously. These are primary metals, fabricated metal products, non-electrical machinery and electrical machinery.

Of the three reporting year-to-year declines, only the metal furniture group had a sizable drop. But because of its relatively smaller size it carried little weight in the total comparison.

Reverse Trend — The increase in capital appropriations from the second to the third quarters last year cannot be attributed to seasonal influences. Earlier surveys of

manufacturing appropriations show that seasonal appropriations peaks come in the first and fourth quarters. Also, metalworking capital appropriations slumped from second to third-quarter 1957.

In third-quarter 1958, four major metalworking industries reported at least the same rate or a higher rate of appropriation approvals than in the previous quarter. In 1957, only one group, metal furniture, showed an increase from the second to the third quarters.

Year-to-Year Lag—But despite the improvement in capital appropriations in the third quarter of last year, the first three quarters of 1958 was still considerably behind the 1957 pace.

All seven major metalworking groups approved fewer dollars in the first three quarters of 1958, compared to the rate of approvals in the first nine months of 1957.

Four of the major industries had year-to-year declines of about 50 pct or more. These include metal furniture, primary metals, nonelectrical machinery and transportation equipment. Three had declines of 25 to 33 pct: Fabricated metal products, electrical machinery and instruments.

Appropriations Per Worker—

Since data on the number of production workers employed by companies responding to the survey has been collected (see table, right), it is possible to show the amount of dollars appropriated per worker for specific industries. With this new analysis tool a company or a division of a company can compare its appropriations with those companies or divisions engaged in similar activities.

Capital appropriations per worker may be unduly high or low, depending upon particular circumstances within a specific company or industry. To smooth out the irregularities of an individual quarter, the appropriations per worker figures shown in industry tables are given for the last four quarters reported.

What New Spending Survey Covers

All companies in the industries listed below, with plants of 500 or more plant workers, were queried. They account for more than two-thirds of the total employment and buying power in the metalworking industry. The last column shows the percentage of production workers employed by the companies cooperating in this survey.

Industry	SIC Code	Plant Workers, Thousands Companies With Plants of 500 or more	Plant Workers, Thousands Cooperating Companies	Cooperating Companies Pct of Total
Metal Furniture.....	251, 252, 253, 254, 259	34	11	32 Pct
Blast Furnaces, Steel Works, Rolling Mills.....	331	580	290	50
Iron and Steel Foundries.....	332	60	39	65
Primary Smelting Nonferrous Rolling, Drawing, Extruding, Nonferrous.....	333, 334	72	41	57
Nonferrous Foundries, and miscellaneous primary metals.....	335	114	60	53
Metal Cans.....	336, 339	59	19	32
Cutlery, Hand Tools, Hardware Heating Equipment (except electrical) & Plumbing Fixtures.....	341	47	45	94
Fabricated Structural Products.....	342	53	17	32
Screw Products & Rivets.....	343	24	21	88
Stampings.....	344	58	24	41
Other Fabricated Metal Products.....	345	22	9	41
Engines and Turbines.....	346	70	46	66
Farm Machinery & Farm Tractors.....	347, 348, 349	77	40	52
Construction, Mining, Material-Handling Equipment.....	351	76	53	70
Metalworking Machinery and Equipment.....	352	63	29	46
Special Industry Machinery.....	353	111	82	74
General Industrial Machinery and Equipment.....	354, 359	108	45	42
Office and Store Machines.....	355	45	24	53
Service Industry Machines.....	356	87	56	64
Electrical Transmission Equip. Electrical & Industrial Apparatus.....	357	77	51	66
Household Appliances.....	358	41	7	17
Electrical Lighting & Wiring Equipment.....	361	88	39	44
Radio & TV Receivers.....	362	135	58	43
Communication Equipment.....	363	98	41	42
Electronic Components.....	364	60	16	27
Misc. Electrical Equipment.....	365	65	40	62
Motor Vehicles & Equipment.....	366	107	32	30
Aircraft & Parts.....	367	94	33	35
Ship & Boat Building.....	368	31	4	13
Railroad Equipment.....	371, 375, 379	582	517	89
Mechanical & Control Instruments.....	372	530	400	75
Other Instruments, Photo. Equipment, etc.....	373	75	14	19
	374	42	22	52
	382	41	24	59
	381, 383, 384, 385, 386, 387	119	31	26
Total.....		3,943	2,280	58 Pct

Based upon returns from 392 companies reporting 566 individual industry codes. Employment figures based on Iron Age Census data, 1957. Figures in columns three and four were rounded to the nearest thousand after percentage figures in column five were calculated. A total of 988 plants with 500 or more workers reported.

SOURCE: The Iron Age; The National Industrial Conference Board.

Capital Appropriations | Primary Metal Industries

Industry	SIC Code	Capital Appropriations—\$ Millions								Pct Change 1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	Pct Change 3rd Qtr. 1958 over 3rd Qtr. 1957	Appropriations per Worker ¹ 3rd Qtr. 1957 to 3rd Qtr. 1958
		1957				1958						
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.				
		Qtr.	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.				
Blast Furnaces, Steel Works, & Rolling Mills.....	331	\$250.4	\$137.0	\$91.0	\$84.9	\$52.4	\$69.4	\$136.3	-46 Pct	50 Pct	\$1,184	
Iron & Steel Foundries.....	332	6.5	7.3	12.7	6.9	4.3	3.5	4.0	-55	-69	476	
Primary Smelting Nonferrous ²	333, 334	33.8	115.8	7.9	59.2	29.8	2.3	12.7	-72	61	2,532	
Rolling, Drawing, Extruding Nonferrous.....	335	16.7	79.3	12.1	42.2	11.9	4.0	12.7	-74	5	1,174	
Nonferrous Foundries and Misc. Primary Metals.....	336, 339	2.4	1.7	2.1	3.6	1.6	0.9	2.8	-15	33	475	
Total.....		\$309.8	\$341.1	\$125.8	\$196.8	\$100.0	\$80.1	\$168.5	-55 Pct	34 Pct	\$1,215	

¹ In dollars per production worker.

SOURCE: The National Industrial Conference Board.

² Includes secondary nonferrous smelters (SIC code 334).

Primary Metals High—On this basis, appropriations per worker ranged from a low of \$433 in the instruments industry to a high of \$1215 reported for the primary metals group.

Four of the seven major metalworking groups had appropriations per worker between \$400 and \$500: Metal furniture, electrical machinery, transportation equipment and instruments. Appropriations per worker in fabricated metal products exceeded \$600 and almost reached \$900 in nonelectrical machinery. But the primary metals group, with appropriations in excess of \$1200 per production worker, leads all others by a wide margin.

The entire metalworking industry approved appropriations of \$716 per production worker in the last four quarters reported. This includes estimates for part of the industry not cooperating in the survey at this time. It differs from the reported average by \$21. In round numbers then, metalworking companies approved about \$700 in appropriations per worker over the last full year reported.

Counting Gains by Divisions—Along with the overall rise in dollar

appropriations, this new survey shows a gain in the number of divisions reporting higher approvals in third-quarter 1958 compared with the rate a year earlier. The increase came to 40 pct.

Only the instruments industry failed to report more divisions with higher approvals in the third quarter than in the second quarter last year.

Two industries, fabricated metal products and transportation equipment, reported a dramatic increase in the number of divisions approving higher appropriations. Still, in every industry, less than half the divisions reported higher approvals compared with a year earlier.

Second Quarterly Report—This study of metalworking capital appropriations is the second of a series of quarterly surveys conducted for The IRON AGE by The National Industrial Conference Board. The first report on this new survey appeared in the November 27, 1958 issue and went into considerable detail on the background of the survey.

Like the first metalworking capital appropriations survey, this report classifies each metalworking

division or establishment according to the three-digit industry codes of the Standard Industrial Classification Manual (SIC).

What Survey Covers—All tables in this report are based on returns from 392 identical companies reporting 566 identical divisions or establishments for all seven quarters shown. The basic universe represents 1,027 metalworking companies with at least one plant of 500 or more workers. These companies have plants in 1,392 individual metalworking industry classifications.

The figures reported in this article differ slightly from those presented in the November 27, 1958 report, owing to a different composition of reporting companies. Further, in this report, 35 separate metalworking industries are shown, one less than in the previous survey.

About 30 pct of the industry reports come from a broader appropriations study conducted under the financial sponsorship of Newsweek magazine. These were the companies with only a single three-digit classification, for which there was obviously no need to report the same figures twice.

Capital Appropriations | Fabricated Metal Products

Industry	SIC Code	Capital Appropriations—\$ Millions								Pct Change	Pct Change	Appropriations per Worker ¹
		1957				1958				1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1957 to 3rd Qtr. 1958
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.				
Metal Cans.....	341	\$14.9	\$12.6	\$ 11.8	\$14.1	\$7.1	\$8.0	\$11.3	-33 Pct	- 4 Pct		\$908
Cutlery, Hand Tools, Hardware..	342	4.2	2.0	1.1	5.5	2.0	1.0	0.8	-48	-27		562
Heating Equipment (except electrical), & Plumbing Fixtures	343	6.4	7.1	1.3	2.4	4.0	2.0	1.8	-47	38		498
Fabricated Structural Products...	344	4.2	11.0	2.8	7.0	6.1	7.6	8.4	23	200		1,207
Screw Products & Rivets.....	345	9.2	1.9	1.8	3.0	1.5	0.8	1.3	-72	-28		724
Stampings.....	346	5.4	4.2	1.9	1.7	3.6	1.6	6.5	2	242		290
Other ²	347-349	5.8	6.2	4.8	5.1	3.4	4.3	2.9	-37	-40		392
Total.....		\$50.1	\$45.0	\$25.5	\$38.8	\$27.7	\$25.3	\$33.0	-29 Pct	29 Pct		\$621

¹ In dollars per production worker.

SOURCE: The National Industrial Conference Board.

² Includes coating and engraving on metal, wirework and wire springs, and miscellaneous fabricated metal products, SIC codes, 347, 348, and 349, respectively

Industry Spending Varies Widely

But for Most, the Decline Has Come to an End

The specific details of third quarter capital spending show a wide difference in attitudes.

Effects of the recession still keep purse strings tight. But most industries show they believe the worst is over and are revising their capital spending plans upward.

Industry by industry, the pattern of capital appropriations varies widely, from up five-fold to a continuing rate of decline.

Outstanding in their optimism are the makers of farm equipment. On the strength of prosperity on the farm, they are investing heavily in the plants and tools to meet the revived demand from the farm.

Others are cautiously moving back into the market for capital equipment. Still others are extremely

conservative and hold out for the recovery trend to reach greater heights.

Following is a rundown of industry groups, showing their third quarter appropriations, and quarterly comparisons over the past year.

Primary Metals

Appropriation approvals in the primary metals industries rose sharply in the third quarter, both compared with the previous and the year-ago quarters.

Of the five separate components in this industry, only one, iron and steel foundries, had a lower rate of approvals than a year previous. In sharp contrast, appropriations in the first and second quarters in each of the five sub-industry groups were lower than in the corresponding periods a year earlier. See table, opposite page.

Trend Reverses — Also, third quarter appropriations in primary metals were more than double the second quarter rate. In 1957, on the other hand, third quarter appropriations had fallen considerably from the second quarter pace.

Despite the substantial improvement in the third quarter, the year-to-date record in the primary metals industry was far below that of the first nine months of 1957, both for the industry as a whole, and the five individual industry classifications.

As previously noted, the primary metals industry had the largest appropriations per worker of the seven metalworking groups. Within this industry, capital appropriations per worker ranged from a low of \$475 in nonferrous foundries and miscellaneous primary metals to a high of \$2532 in primary smelting of nonferrous metals. The blast furnaces, steel works, and rolling mills industry, with \$1184 appropriations per

Capital Appropriations Machinery & Equipment

Capita Appropriations—\$ Millions										Pct Change	Pct Change	Appropriations per Worker ¹
Industry	SIC Code	1957				1958						
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1957 to 3rd Qtr. 1958	
Engines & Turbines	351	\$13.9	\$13.1	\$5.4	\$6.9	\$6.8	\$3.2	\$3.4	—59 Pct	—37 Pct	\$383	
Farm Machinery & Farm Tractors	352	5.6	5.3	3.6	5.1	4.2	7.6	18.3	108	408	1,214	
Construction, Mining, Handling Equipment	353	91.5	25.0	10.9	5.6	32.7	11.8	4.6	—62	—58	667	
Metalworking Machinery & Equipment ²	354, 359	11.3	5.8	4.1	4.9	5.3	3.1	2.7	—48	—34	356	
Special—Industry Machinery	355	21.8	14.7	7.4	7.9	10.8	15.3	7.1	—24	—4	1,713	
General Industrial Machinery & Equipment	356	12.5	8.3	8.0	7.8	10.1	4.9	4.4	—33	—45	486	
Office & Store Machines	357	70.6	72.6	17.7	47.0	19.5	19.3	18.5	—64	5	2,045	
Service Industry Machines	358	1.9	5.3	1.0	2.5	1.0	4.6	1.7	—11	70	1,400	
Total		\$229.1	\$150.1	\$58.1	\$87.7	\$90.4	\$69.8	\$60.7	—49 Pct	4 Pct	\$888	

¹ In dollars per production worker. ² Includes miscellaneous machinery, SIC code 359.

SOURCE: The National Industrial Conference Board.

worker, was primarily responsible for the relatively large appropriations per worker in primary metals among all the metalworking groups.

Fabricated Metal Products

Capital appropriations approved in the fabricated metal products industry rose in the third quarter of 1958, both in relation to the second quarter and to the corresponding period a year earlier.

However, this was the result of a much sharper improvement in two industries, fabricated structural products (SIC 344) and stampings (SIC 346). Only one other subgroup—heating equipment (except electrical) and plumbing fixtures, reported a higher appropriation rate than a year earlier.

Most Were Down—The other four industry classifications had lower appropriations than in the corresponding quarter of 1957. These trends are shown in the table, P. 113.

Despite the third quarter improvement, appropriations approved in the first three quarters in the fabricated metal products in-

dustry were still lower than the approvals registered in the first nine months of 1957.

Better Than Average—However, the third quarter increase was larger than, and the first three quarters decrease was smaller than, the average for all the metalworking industries.

The sharp third quarter rise in approvals in the structural products and stamping industries raised their appropriations for the first nine months this year above the rate of the corresponding period last year.

Nonelectrical Machinery

The nonelectrical machinery industry reported a modest rise in approvals in the third quarter compared to the same period a year ago. (See table, above.)

The decline from the second to the third quarters this year was significantly less than the sharp drop over the same quarters a year earlier.

Farm Equipment Jumps—Compared with a year ago, only three of the eight groups comprising nonelectrical machinery reported a higher rate of appropriations. Lead-

ing the list not only in this industry, but in all metalworking, was the farm machinery and farm tractors group, which had approvals some five times as large as in the year-ago quarter. The prosperity in the farm economy is apparently contagious, spreading to its suppliers.

The other two groups reporting higher third quarter approvals were office, computing, accounting and store machines (SIC 357) and service industry machines (SIC 358).

Soft Spots—In contrast, the industry components directly related to the productive process were still reporting sharp declines in appropriations in the third quarter.

Despite the third quarter improvement in capital appropriations, the year-to-date rate approved in the nonelectrical machinery industry was still substantially below that of last year.

Only the farm machinery and farm tractor group had approvals higher in the first nine months of this year than in the same period a year ago.

More for the Farm—Of the six industry groups in all metalworking

in this select circle, the farm machinery industry has approved by far more appropriations this year than last.

Capital appropriations per worker in the nonelectrical machinery industry were the second highest in the seven major groups.

Electrical Machinery

In contrast to the improvement in the rate of approvals in the nonelectrical machinery, electrical machinery reported appropriation ap-

provals at best at about the same rate in the third quarter as in the corresponding period a year earlier, as indicated in the table below.

When compared with the previous quarter, approvals this year were down more than they were over the same quarters a year earlier.

Of the eight industries comprising the electrical machinery sector, five had a higher rate of approvals than a year earlier: Electrical transmission equipment; household ap-

pliances; radio and TV receivers; communication equipment; and electronic components.

Ups and Downs—In the preceding quarter, when approvals were higher than a year earlier, four subgroups were on the plus side. In the first quarter only one industry had approvals up from the initial quarter of a year earlier.

While approvals this year were about the same as a year earlier for the entire electrical machinery in-

Capital Appropriations Electrical Machinery & Equipment

Capital Appropriations—\$ Millions										Pct Change	Pct Change	Appropriations per Worker ¹
Industry	SIC Code	1957				1958						
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.				
									1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1957 to 3rd Qtr. 1958	
Electrical Transmission Equip.	361	\$25.5	\$3.9	\$2.7	\$7.1	\$8.9	\$5.6	\$3.1	—45 Pct	15 Pct	\$633	
Electrical & Industrial Apparatus.	362	13.1	7.6	4.8	6.6	8.0	6.7	3.3	—29	—31	424	
Household Appliances.	363	14.8	5.2	3.2	3.1	7.8	2.8	4.4	—35	38	441	
Electrical Lighting & Wiring Equipment.	364	2.3	2.3	0.9	2.2	1.3	1.0	0.7	—45	—22	325	
Radio & TV Receivers.	365	1.4	2.5	2.4	2.3	3.0	4.6	2.7	63	13	315	
Communication Equipment.	366	8.6	3.5	3.5	7.0	4.6	7.6	3.9	3	11	722	
Electronic Components.	367	5.2	4.7	4.5	4.2	3.9	4.8	4.9	—6	9	539	
Mis. Electrical Equipment.	369	1.0	1.0	1.2	2.1	0.8	0.6	0.5	—41	—58	1,000	
Total		\$71.9	\$30.7	\$23.2	\$34.6	\$38.3	\$33.7	\$23.5	—24 Pct	1 Pct	\$495	

¹ In dollars per production worker

SOURCE: The National Industrial Conference Board.

Capital Appropriations Transportation Equipment

Capital Appropriations—\$ Millions										Pct Change	Pct Change	Appropriations per Worker ¹
Industry	SIC Code	1957				1958						
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.				
									1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1957 to 3rd Qtr. 1958	
Motor Vehicles & Equipment ²	371, 357, 379	\$146.8	\$61.2	\$42.5	\$141.1	\$99.4	\$40.6	\$36.1	— 30 Pct	— 15 Pct	\$614	
Aircraft & Parts	372	81.9	72.9	28.1	34.6	31.8	26.1	23.9	— 55	— 15	291	
Ship & Boat Building	373	3.1	3.2	1.1	1.1	2.1	1.0	1.6	— 36	45	414	
Railroad Equipment	374	0.9	1.1	0.7	3.0	2.1	0.8	0.8	37	14	305	
Total		\$232.7	\$138.4	\$72.4	\$179.8	\$135.4	\$68.5	\$62.4	— 40 Pct	— 18 Pct	\$468	

¹ In dollars per production worker.

² Includes motorcycles, bicycles and parts, and transportation equipment, not elsewhere classified, SIC codes 375 and 379, respectively.

SOURCE: The National Industrial Conference Board.

Capital Appropriations Instruments Photographic Equipment

Industry	SIC Code	Capital Appropriations—\$ Millions							Pct Change	Pct Change	Appropriations per Worker ¹
		1957				1958			1st 3 Qtrs. 1958 over 1st 3 Qtrs. 1957	3rd Qtr. 1958 over 3rd Qtr. 1957	3rd Qtr. 1957 to 3rd Qtr. 1958
		1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.			
Mechanical Instruments & Control Instruments.....	382	\$8.0	\$3.9	\$4.2	\$2.6	\$3.5	\$2.1	\$4.2	-39 Pct	0 Pct	\$517
Other ²	381, 383, 384, 385, 386, 387	4.6	3.2	1.7	4.1	3.7	2.1	1.5	-23	-12	367
Total		\$12.6	\$7.1	\$5.9	\$6.7	\$7.2	\$4.2	\$5.7	-33 Pct	-3 Pct	\$433

¹ In dollars per production worker.

SOURCE: The National Industrial Conference Board

² Includes laboratory, scientific and engineering instruments, optical instruments, surgical instruments, ophthalmic goods, photographic equipment, and watches, clock-operated devices, SIC codes 381, 383, 384, 385, 386, 387, respectively.

dustry, the year-to-year rate was still lower than in the first nine months of 1957. Only in the radio and TV receivers and communications equipment subgroups were both current quarter and year-to-date appropriations higher than in the corresponding periods a year previous.

Nine Months Figures — In all other electrical machinery industries, the appropriations approved in the first nine months of this year were down from the rate approved in the first nine months of last year.

Appropriations per worker in the electrical machinery industry, aside from the miscellaneous group, had less variation than in nonelectrical machinery.

They ranged from a low of \$315 per worker in the radio and TV receivers industry to highs of \$722 in communication equipment and \$1000 in miscellaneous electrical equipment.

Transportation Equipment

In the third quarter, capital appropriations approved in the transportation equipment industry were slightly lower than a year earlier.

But, as indicated on the table, p. 115, the rate of decline was

much less than in the first two quarters. Also, the drop from the second to third quarters was much less than a year earlier.

Auto Levels Off—Approvals in the motor vehicles industry were the same in the third quarter as a year earlier, following two successive quarters of severe cutbacks.

The aircraft industry continued to report lower approvals in the third quarter compared to a year earlier, as it had in the first two quarters of this year.

The year-to-date rate in approvals in transportation equipment was still significantly lower than in the first nine months of last year.

Railroads Pick Up — On the other hand, appropriations for the first three quarters in the railroad equipment industry were up over the same period a year earlier, one of the six select groups with this record.

Capital appropriations per production worker in the transportation equipment industry were at the lower end of the scale for all metalworking industries.

In particular, only \$291 per worker was approved in the aircraft industry. The highest appropriations average in this group—\$614

—was reported in the motor vehicles industry.

Instruments

In the instruments industry, which also includes the wide variety of other groups, third quarter appropriations were down slightly from the same quarter a year ago.

However, as shown in the table, above, the third quarter was up from the second, while a year earlier, the trend was downward over the same periods.

For instruments alone, the third quarter approval rate was the same as a year earlier. The increase from the second to the third quarters was greater this year than last.

For the other industries in this sector, the rate of new approvals was down for the third successive quarter. As in the case of all the other major metalworking industry groups, the year-to-date appropriations were down from the same nine months of last year.

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INCREASED CAPITAL APPROPRIATIONS in the third quarter show industry is willing to spend for new plants and equipment, given a rise in sales and profits. IRON AGE-sponsored survey by the National Industrial Conference Board puts third quarter capital appropriations by metalworking companies at \$670 million. This is up 23 pct over the second quarter and 16 pct over the third quarter of 1957.

PLANNING NEW CONSTRUCTION? In considering when to build a plant, warehouse, or depot don't overlook this: In the past 10 years, notes H. C. Turner of Turner Construction, while the consumer price index has gone up 20 pct, construction costs have risen 40 pct.

INDUSTRY EXECUTIVES SEE PROFITS UP in 1959 in special Iron Age survey. This contrasts with general gloomy outlook of a year ago. Survey also shows inventories and backlogs off, but sales and prices headed upward--along with wage costs.

ALUMINUM DID BANG-UP MARKETING JOB in '58, plans to push even further this year. It nailed down automotive as a big prospect, made inroads in building, packaging. Forecast for '59 is for 15 to 20 pct increase in shipments. Capacity will be no problem.

RECESSION HIT RAILROADS WORSE THAN TRUCKS last year. One likely result: severe car shortages at times this year. Another: Continuation of the pickup in freight car building. Look for about a 10 pct increase in carloadings in '59.

GROSS NATIONAL PRODUCT, now being reported on "constant" (1957) dollar basis, permits marketing men to think in terms of volume instead of price. Actually, for a dozen years or so, inflation has eaten away 3 pct of GNP every year.

ENGINEERING ALLOY STEELS containing nickel are moving into new areas: Heat treated high strength plates and shapes (3 pct Ni) are going into bridges, pressure vessels; alloy steels (up to 3.5 pct Ni) are being used for low temperature service. For exceptionally tough conditions there is a 9 pct Ni steel.

CAPITAL SPENDING MAY RISE more than predicted for '59, says H. Thomas Hallowell, Jr., head of Standard Pressed Steel Co. Imminent prospect of the "fabulous" '60's, should tip the balance on many such orders, particularly for machine tools, he feels.

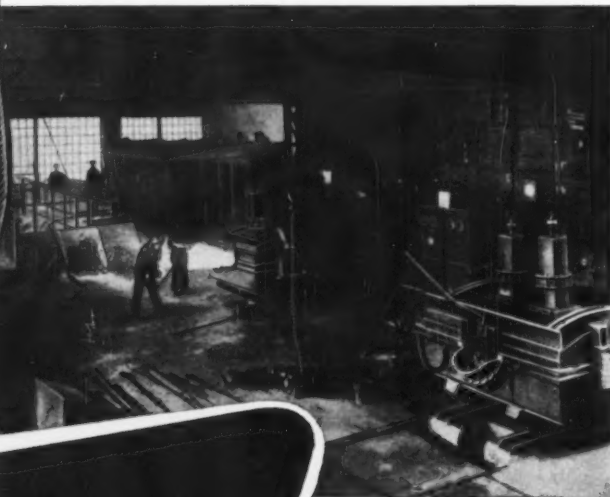
DISTRIBUTION COSTS will get a hard going-over this year. While mechanized handling trend will continue, new emphasis will be on cost of carrying inventory--closer liaison with suppliers for more accurate scheduling of shipments from suppliers.



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Will Labor Stall the Recovery Forecast for 1959?

A strike in steel alone could deal a body blow to the economic upturn so freely predicted.

But if major labor negotiations are settled peaceably, 1959 is just about certain to be a better year than '58.

■ Will labor upset the economic applecart in 1959?

It could.

A prolonged strike in the steel industry alone could dim the glow of rosy predictions of industrial recovery during the coming year.

Attitudes Important — The eco-

nomie forecasters assume that labor contracts in major industries will be renewed without strikes. The chances are that most of them will. But with contracts affecting nearly three million workers up for renegotiations (see box), the attitude of labor and management can be mighty important in a "recovery" year.

It isn't likely that labor will be any less aggressive this year than it has in the past. Any labor leader who wants to keep his job is going to ask for better wages, fringes, or both.

Inflation Issue — Management is worried about inflationary effects of labor's continuing demands for a

bigger share of the corporate sales dollar. It's getting harder to pass along the cost of a hefty wage boost to the consumer. In many industries business is not so good that competitive pricing can be overlooked. Buyers, themselves fighting to lower costs, are more price-conscious. And Washington is casting a jaundiced eye at price boosts in key industries.

Inflation could very well be the pivotal issue in the labor-management tussles that lie ahead. It could provide both the excuse and the pressure for bigger demands by labor leaders. It could also stiffen the resistance of management.

Washington Angle—Washington,

Will Industry Get by '59 Labor Hurdles?

These are the major labor contracts scheduled to expire during 1959:

Expires	No. of Agreements	Workers (Thousands)	Industries
February	12	192.2	Telephone
April	13	160.6	Rubber, Textiles
May	15	228.6	Women's Apparel, Telephone
June	37	677.0	Steel, Metal, Mining, West Coast Longshore, Telephone
July	11	108.9	Aluminum
August	12	109.9	Meatpacking
September	14	163.2	Cans, Atlantic and Gulf Coast Longshore
October	8	1,078.8	Railroads
Total		2,719.2	

April Was the Low Point

"The easiest thing to measure about a recession, after it is over, is how long it lasted. At the National Bureau of Economic Research we have a particular way of doing this. It involves a careful study of numerous broad indexes of business such as production, income, employment, unemployment, sales, profits—perhaps 30 or 40 such monthly or quarterly series—in order to determine what month seems best to describe the month of peak business activity.

"... just about a year ago we decided that July 1957 was such a peak. Then when the general business decline seemed to have come to an end we studied the same collec-

tion of data and decided what month best represented the low point in aggregate economic activity.

"During the summer the month that emerged with these qualifications was April 1958. This was not the low month for every measure of aggregate activity—but April was the low month for industrial production and total employment outside of farming, and fairly centrally located with respect to turns in other important measures of economic activity."

Geoffrey H. Moore,
National Bureau of
Economic Research

too, is worried about inflation. Just how worried remains to be seen. Is its concern serious enough that it will refrain from pressuring management into settling a major strike on terms that make price boosts inevitable? It has done this in the past to end steel shutdowns.

Steel labor is the one to watch. David J. McDonald, president of the United Steelworkers, has some firm ideas on what his members have coming to them from the steel companies. He thinks in terms of "substantial" improvements — and has yet to use the word lightly.

Free Hand For McDonald — Among other things, Mr. McDonald has been thinking and talking a lot about the short work-week. He's disturbed about the inroads steel plant automation has made on his membership. The fact that the steel companies have automated their operations in self-defense against rising wage costs is beside the point in Mr. McDonald's thinking. This could be the year he presses the point.

At the union's ninth biennial convention last year, delegates adopted a resolution authorizing Mr. McDonald and his Wage Policy Com-

mittee to demand just about everything that might come to mind:

1) Substantial improvements in wages and salaries, hours of work, incentives, job classification, Supplementary Unemployment Benefits.

2) Better pensions, insurance, vacations, holidays, week-end premiums, holiday and shift differentials.

3) "Much overdue" improvements in the contracts and their administration "to afford greater protection for our members in employment rights and benefits."

4) Steps to strengthen grievance and arbitration machinery where necessary "to overcome obvious attempts by companies to take advantage of current unemployment in denying prompt justice and equity to our members."

Odds Favor a Strike—Whatever the union demands when negotiations to replace the existing agreements get underway next spring, the bargaining will be tough. It usually is. The betting right now is that there will be a strike.

A long strike in steel would deal a body blow to the economic recovery. Steel users are aware of this and have already begun to rebuild

badly-depleted inventories. But it could be a case of too little too late for some. Here's why:

Strike Would Hurt—IRON AGE sources estimate that steel stocks in the hands of users are now at their lowest point since before 1950. Even with an expected buildup of 4 to 6 million tons in the first half of 1959, steel stocks on July 1, when steel labor contracts expire, will be about where they were at the end of the 1956 strike. At that time, inventories were estimated at 18 million tons.

These same sources say that a steel strike of 30 days' duration could result in hardship for some steel users.

Peace Would Help—If labor and industry can get together without strikes, the economy is almost certain to continue the recovery that started last spring. Here's what the economists have to say on the business outlook:

Gross National Product

GNP, the market value of all goods and services produced, will be up. On the average, 212 economists participating in an F. W. Dodge Corp. survey expect it to reach an annual rate of \$460 billion by the fourth quarter of 1959. Emerson P. Schmidt, director of economic research of the U. S. Chamber of Commerce, looks for GNP to reach a new high of \$470 to \$480 billion this year. Toward the close of 1958, it was running at an annual rate of about \$450 billion.

Industrial Output

F. W. Dodge's economists come up with a median forecast of a steady rise in the industrial production index of 147 (1947-49 equals 100) by the end of 1959. The index stood at 141 in November 1958, a rise of 15 points from the year's low of 126 in April.

Construction

The Dept. of Commerce forecasts a possible 7 pct increase in con-

struction outlays this year over the estimated \$49 billion of 1958. This would make total spending for '59 about \$52 billion. F. W. Dodge predicts a rise of only about 3 pct.

Housing starts are expected to hit close to 1.2 million, about the same as the estimate for last year.

Private construction is expected to rise about 4 pct, and public about 14 pct. Private industrial construction may drop as much as 15 pct; office and warehouse, 4 pct; public utilities, 3 pct. Public housing will rise about 36 pct; military construction, 16 pct; highways, 12 pct; sewer and water, 9 pct.

Automotive

It looks like a busy year, relatively, for the automakers. They're predicting 1959 sales of 5.5 million autos and 900,000 trucks. This compares with an estimated 4.3 million and 880,000, respectively, during 1958.

The market could be better than the carmakers predict. At year-end, sales were going well. Ward's Automotive Reports forecast a first-quarter output of 1.64 million units, fourth highest first quarter on record. (For details, see page 137.)

Appliances

Appliance makers look for 1959 sales to show an improvement of from 2 to 8 pct over 1958. Sales began to move up in the second quarter of last year and are still going well. Despite the recession, sales in '58 were off only 5 pct from 1957. Better housing starts and a rising replacement market are factors in the upturn. (For details, see page 128.)

Nonferrous

Most nonferrous people expect the new year to be a better one than 1958. Aluminum producers look for a 10-20 pct pickup in shipments. Copper business and prices are firming up.

The Steel Outlook

1959 will be a good year for steel. But labor will call the tune on the market pattern.

Due to the danger of a strike at mid-year, the first half will be a busy one for the mills.

■ Steel labor will have a lot to say about the pattern of the steel market this year.

It's a foregone conclusion that steel users will order more steel in the first half of the year than they will need, as a hedge against the possibility of a strike when labor agreements expire July 1.

For this reason, the mills probably will have a "feast and famine" year—feast in the first half and famine, relatively, in the last half. This would be the case whether there is a strike or not.

Roger M. Blough, chairman of U. S. Steel Corp., believes steel output during the first six months of the year could be at an annual rate of nearly 113 million tons. It's possible that at some time during this period the mills would be operating at close to their ability to produce.

Forecasts for the year range anywhere from 100 million tons to as much as 115 million tons. Unless the economy really catches fire, it isn't likely that output will hit the 115-million-ton mark. It's possible that production will exceed 100 million tons, perhaps even approach 110 million tons.

A prolonged strike would knock all forecasts into a cocked hat.

Most of the market strength this year will come from automotive, construction, appliances, machinery, farm implements, and probably the oil and gas industry.

The railroads may move into the picture, but probably not until late in the year.

If the predictions for these industries work out, the mills could have a fairly uniform demand for both light and heavy steel products. As the year began, the market was topheavy on the side of sheets, strip, and coated sheet products.

If there is no strike, steel buyers will be firmly in the saddle again during the last half.

While the economic forecasts for 1959 are almost unanimous for a steady improvement, no one expects anything of boom proportions.

Meanwhile the mills have built their capacity to the point that they can handle almost any level of demand without danger of any serious pinch in supply.

There probably will be some rough spots near the end of the second quarter as pressure mounts for delivery before the labor contract deadline.

As the mills approach capacity operations it becomes tougher to squeeze more production from their equipment. They point out that the last 10 pct of capacity is the hardest to get going.

After the first half, the tension will ease, barring a strike. Even some of the more optimistic forecasters look for third quarter operations of no more than 68 pct of capacity, and a fourth quarter of 78 pct.

The mills' determination to hold labor contract improvements to a level that will preclude a rise in prices will be the key factor in the outcome of labor talks. Steel labor is almost certain to insist on concessions that would necessitate a price hike. The head-on clash could lead to a strike.

Federal Spending Will Spiral

A Move to Hold it Down Appears to Be Doomed

Ike wants to cut government spending in the new fiscal year.

Budget Director Stans wants to hold the line, and the military wants more.

It looks like a Stans-Military compromise.—By G. H. Baker.

■ No letup in the rising spiral of government spending is in sight.

The recent rash of demands and promises from the Administration and a few congressmen that federal spending be held down or even cut are simply the first moves in the upcoming "legislative compromise," as President Eisenhower calls it.

More, Not Less—By the time the executive agencies of government and a free-spending liberal Congress get through, the government will spend a little more than \$80 billion in the current fiscal year (ending June 30), and at least 10 pct more than that in the next fiscal year.

"You can't run a 1959 government on 1910 prices" is becoming a watchword of rationalizing government officials.

Pacesetters—Two men—Budget Director Maurice H. Stans, and Defense Secretary Neil McElroy—will set the pace of government spending in 1959. Initially, the hold-the-line position of Stans will prevail, but in

the end, most political analysts believe a Democratic Congress will give McElroy about what he wants.

This will mean close to \$1 billion more in military spending in the next fiscal year, bringing the total over \$42 billion.

Efforts of the President to hold the budget to about \$78 billion, down \$2 billion from the current year, represent more a minimum start than a realistic figure.

Military Dominates — Military spokesmen are already crying budget blues, underfunding, and hinting at threats to national defense. An opposition Congress controlled by Democrats will take every opportunity offered by Service chiefs to raise the military spending program down the line, and charge the White House with "false economy."

Military requests before being screened by the Defense Secretary probably ran above \$45 billion. The Secretary reportedly cut this back to about \$41.5 billion (almost \$1 billion more than is being spent this year).

Another Problem—This isn't the whole story. Last year's original budget called for expenditures of \$40.3 billion. The total is now up more than a half-billion dollars, and may well rise even further.

The government has a strong tendency to spend even more than the original budget estimates. Only \$74 billion was to be spent in the current year. Extra programs—added both by the Administration and Congress—have now pushed the total close to \$80 billion. It may go even higher when Congress reconvenes.

Metalworking — As a customer for metals and metal products, the government will become an even bigger factor in the 1959 market.



SPENDING HEAD: Budget Director Maurice H. Stans is leading what is likely to be a losing fight to hold the line on new government spending.



MOVING AHEAD: Highway paving scenes like this will be plentiful in 1959. (Wire Reinforcement Inst. photo).

More Spending for Roads in '59

Investment by federal, state, and local governments in highway programs will be 13.7 pct above 1958's levels.

But Congress must close gap between spending and funds available to finance the work.

■ Roadbuilding will move into higher gear this year and in the 1960's.

Here's the coming spending pattern as predicted by Louis W. Prentiss, executive vice president of the American Road Builders Association:

During 1959 all units of government—federal, state, and local—will invest 13.7 pct more in roadbuilding than 1958's total of \$6.2 billion. And in the years following 1959 even larger grants should push the highway program past the \$8 billion-a-year level by 1962.

Steel Will Benefit—The construction portion of 1959 govern-

ment outlays should be \$5.715 billion, an increase of 11.3 pct over 1958. The remainder of the \$6.2 billion outlay—\$485 million—will go for preliminary engineering studies and right-of-way buying.

This upsurge in highway spending is good news for suppliers of structural steel, reinforcing bar, pipe, and other roadbuilding materials. Currently about 500 tons of steel go into every mile of primary and interstate road built in the U. S.

Despite all this there's a major roadblock in the path of the highway program. It's the growing gap between funds spent on roadbuilding and the government revenues needed to finance them.

Problem for Congress—This is a "must" issue for the next session of Congress. By next July 1 revenues in the Highway Trust Fund (set up to finance the program in 1956) will be almost \$1 billion short of spending schedules.

Congress has several choices to

close this gap between spending and collecting roadbuilding monies. It can: (1) make general Treasury funds available in addition to the Highway Trust Fund; (2) increase present taxes or levy new ones to build up the Fund; (3) issue government-backed securities; or (4) modify the scope of the highway program.

Viewpoints—Probably the biggest contest in Congress will be between groups proposing tax increases, and backers of the bond-issue solution. Senator Gore (D-Tenn.), chairman of the Public Works Subcommittee, has never considered the Highway Trust Fund sacred. His office told *The IRON AGE* he will "vigorously support" the original construction schedule passed in 1956. He does not believe any bookkeeping obstacle should stand in the way of the highway plan.



AUTOMATIC CONTROLS: Punch card programming, as on this J&L roughing mill, made notable gains.

Steel Reaps Technical Harvest

While markets were slumping in 1958, steelmaking technology took wings.

Great things are expected this year as the industry applies what it developed last year.—
By G. J. McManus.

■ Despite a market slump in 1958 the steel industry made some of the most important technical gains of its history. New basic concepts emerged in practically every phase of steelmaking.

This year will feature application rather than new development. The mills go into 1959 with any number of irons in the fire. Rising sales should loosen the supply of needed dollars.

Highlights of 1958 include:

A major breakthrough in openhearth construction and operation.

Full proving out of the basic

oxygen steelmaking process.

New thinking on ore beneficiation and blast furnace operation.

Partial completion of the most revolutionary rolling mill in 20 years.

American steelmakers were jolted in 1958 when a team of top technical men returned from Russia with reports of spectacular blast furnace and openhearth performance. The Russians are getting 2500 tons a day from blast furnaces which in the U. S. would average about 1500 tons. They are building openhearth roofs that last 400 to 700 heats, about four times the U. S. average.

Impetus — Russian techniques were not all new to steel men here. Before the visit there was activity along similar lines in the U. S. But the Russian visit dramatized the advantages of new practices, and gave development in this country

a hard forward push.

The steel industry was sold on sintering before the year started. Twenty-eight major sintering plants were authorized, for an addition of 20 million tons. Many of these projects were completed in 1958.

Payoff—Current thinking is the more you do to ore before it goes into the blast furnace, the better. This has led to consideration of 100 pct sinter burden and varying degrees of prefluxing. From sintering programs alone, steel mills expect to boost blast furnace output 20 pct. Prefluxing promises to add another 10 pct.

The openhearth shop made the most significant breakthrough of the year in a new sprung arch basic roof. Plated brick with a relatively simple suspension system offers the high temperature durability of basic refractories at a clear-cut economic

advantage. Tests at U. S. Steel's Fairless Works found one roof lasting more than 360 heats.

More Oxygen — Much of the excitement over this development is because it paves the way for volume use of oxygen in the open-hearth. Steel men have long known they could step up production with oxygen roof injections. The problem has been to find an economical refractory that would stand up long enough to make the extra production worthwhile.

Furnaces equipped with the new roofs are applying oxygen at the rate of 500 cu ft per ton of steel. (Average has been 60 cu ft). One furnace is operating with a charge of 80 pct hot metal. And an open-hearth shop is operating over 110 pct of rated capacity.

Disagree—Some steelmen favor the basic oxygen process only for brand new capacity. "It doesn't make sense to put an expensive roof over a furnace and then burn it off with oxygen," says one.

A notable portion of new steel-making capacity will certainly come from oxygen vessels. The performance of units at Jones & Laughlin Steel Corp. has erased doubts of the soundness of the new process.

Oxygen vessels offer the advantages of low capital cost, high output rates (70 tons an hour) plus good quality in the low carbon ranges. Heat sizes are steadily increasing. Carbon control in the high ranges is improving.

Controls—In the rolling end of steelmaking, progress centers on automatic control. Equipment size and power are being beefed up. Mechanical designs are following conventional lines, but radical changes may be coming with new control systems.

Punch card controls are now going on 18 steel mills. Most elaborate installation is on U. S. Steel's new structural mill at South Chicago. The blooming mill at this installation is fully automatic. On the structural stands, 23 functions are card controlled.

Iron Ore Outlook

■ The iron ore industry is looking for better business in 1959. But this is relative. The outlook has graduated from dismal to merely uncertain.

First of all, the industry is pretty well resigned to a steel strike that will tie up its operations as well.

No real crisis is likely because of the greatly increased capacity of the Lakes boats.

Import Headache—Foreign ore will be a bigger headache. In 1958 when domestic ore companies were having a disastrous year, ore imports were off only slightly. Through November, 23 million tons came in, compared to about 30 million tons in 1957.

This year it is just about a sure thing that importers will attempt to boost their market penetration, and extend it to the Great Lakes area. The St. Lawrence Seaway is scheduled to open in April. This will permit importers to use

Humphrey-class boats with 20,000 ton capacity, rather than the 2500 ton Canallers they have been restricted to.

Of course after 1958, practically the only direction the market can go is up. Lake Superior district shipments had the worst season since 1939. Shipments hit only 45 million tons, down a serious 31.7 million tons from the 84.6 million tons shipped in 1957.

Early indications point to about a 70 to 75 million ton year in '58.

Taconite output should be up substantially. Erie Mining Co., for example, is planning on a 4 to 5 million ton year. In 1958 they turned out only about 2.6 million tons. Reserve Mining's output last year was only slightly off — 4.9 million tons from 5.1 million tons in 1957. This is generally taken to indicate an increasing emphasis on taconite for blast furnaces of the project partners.



HIBERNATE: Ore boats of U. S. Steel's Pittsburgh Steamship Div. are being made shipshape at their winter berth in Duluth, Minn.

Appliances Due for Sales Boost

Manufacturers Increase Their Steel Stocks

Appliance sales are slated to rise anywhere from 2 to 8 pct during 1959.

More consumer spending, new housing starts, and a greater replacement market are some of the important reasons.

■ Appliance makers are confident about market prospects for the coming year.

As a group they predict sales in 1959 will be anywhere from 2 pct

to 8 pct above 1958 levels. John F. McDaniel, general sales manager at Hotpoint, expects a 5-8 pct gain this year. Norge's Judson Sayre estimates 15 million major appliances will be sold during 1959. This would be increase of 400,000 over 1958 sales.

Sound Reasons—Why the upswing in opinion from an industry that was gloom-shrouded at the opening of 1958? For one thing, sales started inching up in second quarter and really began moving

up after mid-year.

Even with the recession, sales in '58 were only down about 5 pct.

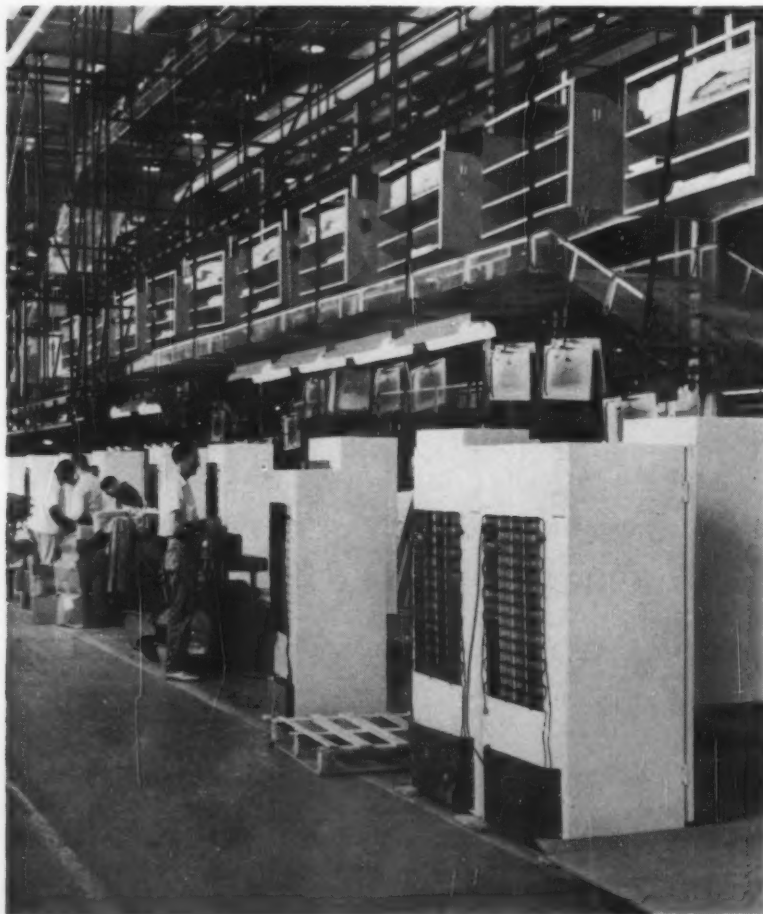
More Steel Use—Metal producers will have a share in appliance industry gains in 1959. Steel consumption by these manufacturers should increase from the 1.4 million tons used in 1958 to about 1.6 million tons in 1959.

But even these steel purchase forecasts for '59 are conservative. Remember inventory cutting has been going on in the appliance field since well back in 1957. In forecasting steel requirements for 1959, it's well to remember that appliance sales were off only about 2.5 pct in 1957. Yet steel sales to the industry went down by over 20 pct.

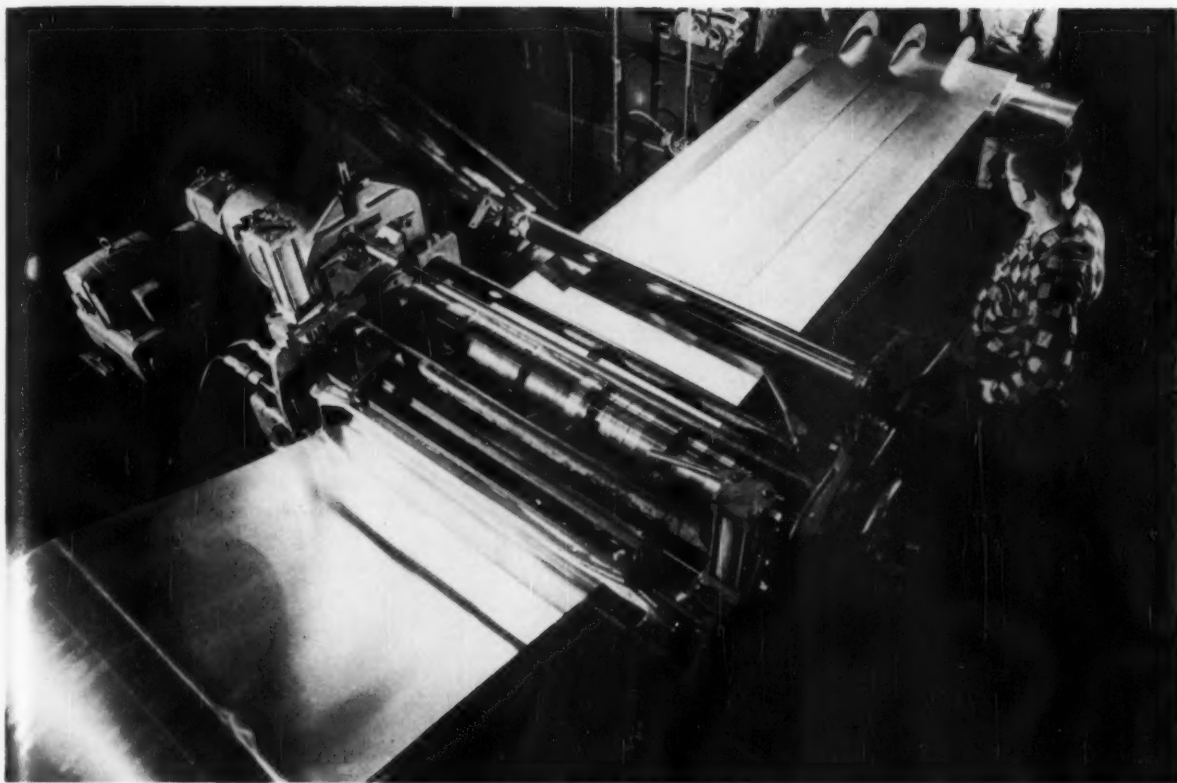
Inventory Shaving—And bone-bare inventories continued the rule even after appliance sales began a mild revival in the second quarter of 1958.

Appliance makers had the same approach on parts such as electric motors, castings, stampings, hardware, wiring, tubing, and plastic components. Several big appliance makers modified production schedules because component makers could not feed them parts to match upward revisions in manufacturing schedules.

Price Outlook — What about 1959 appliance prices? It's generally expected that 1959 will see increases by most manufacturers in pricing schedules. Higher labor and raw material costs are given as the reasons. However, the pattern may be more complex. In hopes of making good things better and giving the current business boost a little added zoom, at least a few producers are studying the prospect for price cuts.



NEW FOR THE OLD: Rising replacement market for refrigerators, expected to hit peak by 1960, will still be a factor in boosting sales of appliances during 1959. (Westinghouse Electric Corp., Columbus, O.)



MILL SHAPES: Aluminum industry has the equipment to meet the 20 pct boost in shipments expected in 1959.

Aluminum Expects a Big Year

Aluminum's long range future looks brighter than ever.

There are good reasons to expect a 20 pct increase in 1959 shipments.—By F. J. Starin.

■ No, matter how you look at it, the aluminum industry is sitting on a rosy future.

In the long run, it looks like aluminum is going to become a dominant factor in packaging. Building is already the biggest market, and most observers feel the potential here has hardly been scratched. And, it looks like only a matter of time until the industry adds aluminum auto engines to its growing list of big tonnage uses.

Shipments Up—None of this is likely to be accomplished to any

degree in 1959. Yet the consensus is that shipments will be a fat 20 pct up from 1958.

The history of the industry backs up the optimistic consensus. The average growth rate for the industry has been about 10 pct per year, compared with an average of 3 pct for all other industries.

Also, in the recent recession, and the decline of 1954, the aluminum companies dropped about as much as industry in general. But in periods of rising industrial activity aluminum shipments increased 2½ to 3 times as much as the overall index of production.

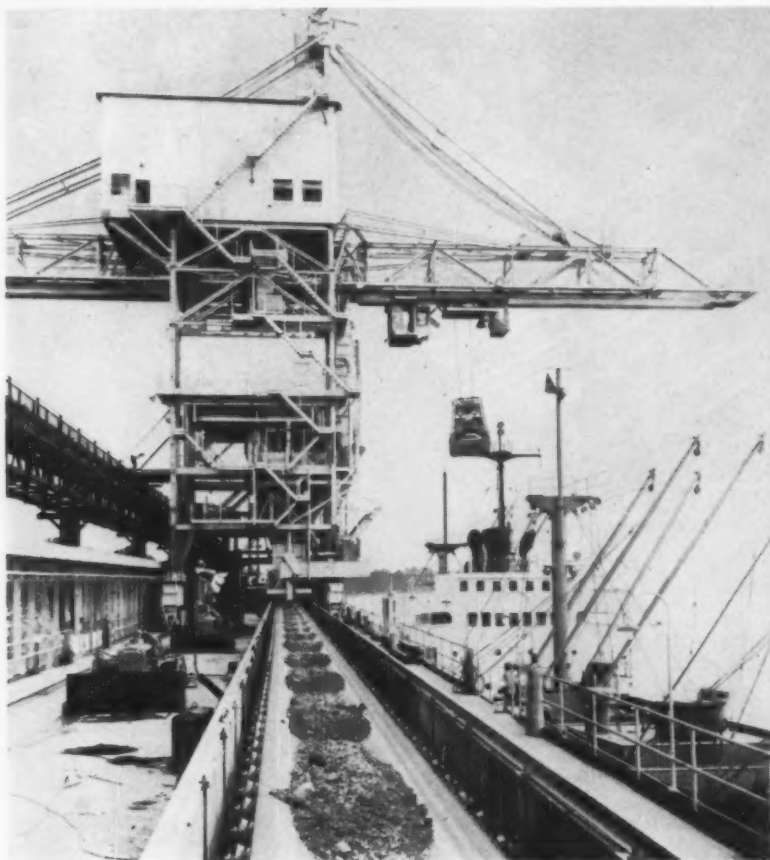
Causes—The seers aren't pegging their optimism on history alone. They say the demand will come from a combination of increased activity by their customers, more

use of aluminum per manufactured item, and a liberal sprinkling of new markets. Also, many observers say actual use of aluminum in 1958 topped shipments by a notable margin. They say users have worked inventories down to where better business would force rebuilding.

There is no reason to expect any shortage. About 433,000 tons of primary capacity was added in 1958. Another 330,000 tons will be installed in 1959 and 1960. The total industry capacity going in to 1959 is 2,274,500 tons.

Plenty of Metal—Production in 1958 was about 1,557,000 tons, 6 pct off from the previous year, but more than enough to meet demand. A 20 pct boost would total 1,868,400 tons, well within rated capacity.

New Link in Ormet's Chain



SEASIDE TERMINAL: A gantry crane digs about 800 tons of bauxite per hour from one of the first ships to arrive at the new Burnside Bulk Marine Terminal on the Mississippi River just below Baton Rouge. The \$15 million facility is owned by Baton Rouge Port Commission, and leased to Ormet Corp., aluminum

producer jointly owned by Olin Mathieson Chemical Corp., and Revere Copper and Brass, Inc. The ore, from mines in Surinam, is conveyed to an adjoining Ormet plant, converted to alumina, then sent further up the river to other Ormet plants to be made into metal.

Freight Car Shortage?

Railroads in the U. S. are buying too few freight cars to prevent eventual shortage, government transportation experts fear.

The Interstate Commerce Commission is concerned that in recent months cars owned by the major rail lines have decreased. At the same time the bad-order percentage has risen.

Chairman Howard Freas, of the ICC, says a 10 pct rise in carloadings above the 1957 level will produce "one of the worst car shortages

of recent years."

In the most recent 12-month period for which the Assn. of American Railroads has figures, the 110 principal lines took on 49,852 new units. But car retirements during those months came to 61,894.

Alcoa Alumina Plant

Operations at Aluminum Co. of America's newest and largest alumina refining plant are scheduled to start on February 1.

The facility, at Point Comfort, Tex., will not actually be completed

until near the end of 1959. It will then have an annual capacity of one million tons. It is designed so that capacity can eventually be doubled.

Extruded Beryllium

Beryllium Corp., Reading, Pa., has landed what it calls a "sizable research and development contract" on the extrusion of beryllium.

The work will be performed over the next six months. It is actually part of a subcontract from Northrup Aircraft, Inc., Hawthorne, Calif., holder of a prime contract from the AMC Aeronautical Systems Center, Wright-Patterson Air Force Base, Dayton, O.

The purpose of the project is to develop aircraft structural shapes of extruded beryllium. One of the reasons the Reading firm landed the contract is its new 1700-ton Loewy Hydropress.

Fills Commerce Post

John J. Allen, Jr., six-term congressman from California, is to be the new U. S. Under Secretary of Commerce for Transportation.

Mr. Allen is President Eisenhower's selection to fill the post vacated by Louis S. Rothschild in October. The President will send his name to the Senate for confirmation when the 86th Congress convenes in January.

British Steel Bulls

British steelmakers are hopeful their industry has finally touched bottom. Reports are that they hope for a leveling off of demand at the current rate of about 16 pct below 1957.

The British steelmen cross their fingers and say that inventory cutting appears to be over. Inventories at customers' plants dropped 6 pct in the third quarter, a record fall. Consumption was reckoned at about 6.9 pct below the same period in 1957.

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Trimming steel plates with hydraulic shears cuts cost at Caterpillar Tractor Co.



8 ft. shear representing investment of less than \$1 per hour pays for itself out of savings in 36 months. The 8 ft. Pacific shear at Caterpillar Tractor Co. shown here, the largest hydraulic in the world, cuts material up to 1½" thick from flat bar stock and plates to finished

lengths and widths and trims angles. All heavy shearing at Caterpillar Decatur, Ill. plant is done on Pacific Hydraulic Shears.

Any plant, large or small, can reduce cost of shearing metals of sizes from 20 gauge to 2" plate with a Pacific shear of the corresponding size or with an adjustable rake Pacific shear.

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Rawson L. Wood

Pioneer in Investment Casting

To the ancients, the process was mainly an art form, but not so today.

With Mr. Wood's help, investment casting has become an important industry.

■ As founder and president of Arwood Precision Casting Corp., Rawson L. Wood has been a leader in converting a prehistoric art into an important, modern industrial process.

The ancient art is called the "lost wax" process. In industry today it is known as investment casting. Its principle is simple enough. A wax mold is made, then surrounded with investment materials. The wax is melted out to form a cavity into which molten metal is poured. The metal hardens into a precise image of the original wax mold.

Aware of Potential—Until World War II, investment casting was used only in the jewelry and dental fields. Rawson Wood became familiar with the process in his family's jewelry manufacturing business, J. R. Wood & Sons. He kept his eye on new developments.

When advancements in diemaking permitted duplication of identical wax molds, Mr. Wood went to work. He headed up the War Products Div. of his family's firm and soon was pioneering in the industrial applications of investment casting. He has since co-authored a book, "Investment Casting for Engineers."

He Goes It Alone—After the war, he bought the division from J. R. Wood & Sons and struck out on his own with Arwood Precision Castings Corp. The company has



RAWSON L. WOOD: His employees respond to profit-sharing.

grown from 25 employees to almost 700 today. Its original little shop in Brooklyn, N. Y., has been replaced by a larger one plus two more plants in New England and one in California.

To bring his company along at an orderly rate, Mr. Wood stressed three factors—quality, research, and personnel.

Profit-Sharing Advocate—"In a company like ours," says Mr. Wood, "without an actual brand name product, all we really have is the ability of a team of people." Consequently, he hires top-flight experts to head each department and goes all-out on a profit-sharing plan.

"The only way to get people to do the best job they can in work of this type is to give them a personal interest in the rewards of their work," he explains. His employees, right down to the office boy, have shared in as much as \$485,361 in one year.

Benefits Stockholders—This was not done, Mr. Wood points out, at the expense of the stockholders. Capital value has increased from the original \$25,000 with which the firm was started to \$1.5 million today. Sales have jumped from \$159,000 in 1944 to \$7 million in 1957.



Lundberg cuts costs 11% by switching to Timken® hot-rolled seamless steel tubing on National Acme screw machines

TO cut costs, Lundberg Screw Products Company of Lansing, Michigan, investigated the possibility of using hot-rolled tubing on its National Acme screw machines. The question: were hot rolled tolerances adaptable to standard collets.

Timken Company sales engineers suggested they try hand chucking. Although hand chucking would mean a slight increase in time due to minor adjustments of collet tension, the material savings would more than offset the higher labor cost. And it did. The manufacturer found these adjustments added 1/10 of an hour per tube to production time. *But* the saving in material cost was 11%.

Can hot-rolled Timken® seamless steel tubing save money for you? Call us and see. And to further increase

your steel savings, ask Timken Company engineers to recommend the most economical tube size for your hollow parts job. We'll guarantee this size to clean up to your dimensions. The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable: "TIMROSCO". Makers of tapered roller bearings, fine alloy steels and removable rock bits.

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Recovery Has Its Own Problems

Emphasis has shifted from the problems of fighting the recession to gearing to the recovery.

A major problem is gaging the extent of the upturn in the absence of strong indicators.

■ If you ask the average executive what he believes will be the biggest management problem this year, his answers probably will cover a wide range of subjects. They would include labor, prices, higher costs, improving operating efficiency and others.

You will note that very few executives are now primarily concerned with general business conditions. This is a marked difference from the attitude a year ago. At that time, with the business decline gaining momentum, executives were

concerned with such basic problems as riding out the recession. Many, simply, were worried about staying afloat.

Recovery Attitude — Today the executive's attention is turned away from such basic problems as survival to the more specialized problems of gaging operations to make the best of the recovery.

His inventory problem now is not how to cut, but how far he should rebuild. In personnel, instead of wielding the axe on the deadwood, he is now looking, although carefully, for new management talent to be cultivated. These are just examples of the changing state of mind.

Watchful Waiting—The extent of the recovery is still to be determined. In the absence of clear-cut

boom indications, few companies are waxing expansive at the moment. Most are optimistic, but with a wait-and-see attitude about anything farther in advance than the first half.

This makes sense, but there is danger of becoming inflexible should recovery momentum continue to pick up.

Overall, industry is in pretty good shape as it comes out of the recession. Working capital of U. S. corporations was put at a record \$118.8 billion at the end of the third quarter, according to the Securities and Exchange Commission. This is a gain of \$2.2 billion in the quarter.

Ratio of cash and securities to current liabilities rose to 43 pct, compared with 39 pct a year ago.

Inflation Stands as Biggest Single Threat

Everybody's Against It—Regardless of individual problems, it's becoming clear that inflation is the biggest threat confronting business.

It's apparent that only a minority of manufacturing companies believe they can hold the price line this year, in spite of strong competition in most industries. And this is in the face of demonstrated consumer hostility to creeping price levels.

As indicated in *Industry Survey Reports* (starting P. 153) most companies expect to raise their prices, however reluctantly. Higher prices of parts and materials, and expected higher wage costs, make it inevitable.

Labor Talks Tougher — Something else has come into the picture.

With improved business conditions coming, labor is already thinking about demands that would have been considered out of the question a month or two ago.

It follows that labor relations people who have contracts to negotiate this year wonder if they will be able to hold to non-inflationary pacts. Unfortunately, it goes without saying that as business improves, so do the chances of strikes.

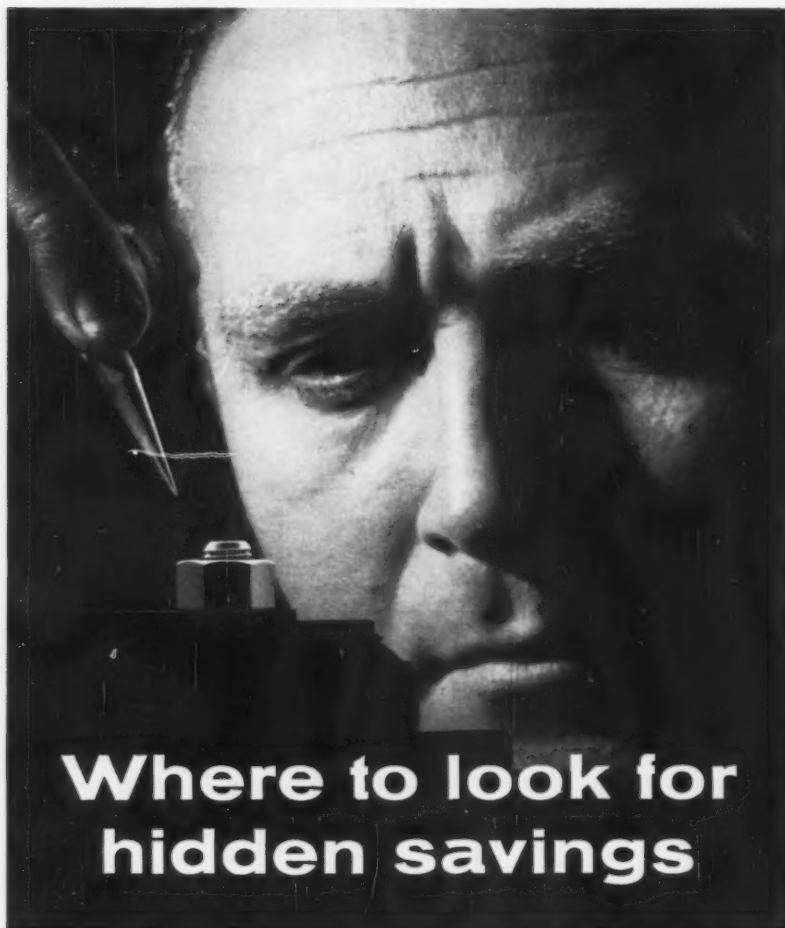
It turns out that business is in the middle of the inflation picture, and probably will get blamed for things it can't control.

Is It Worth It? — Hard-headed realists say the Federal Reserve Board does have the power to keep

inflation in check. But the price is a politically unacceptable body of unemployed for one thing. Another consideration is the danger of curtailing the expansion of the economy if monetary controls are applied as the major anti-inflation weapon.

If your company is to do its part in battling inflation, it will have to be tough this year; tough on management to keep costs down, tough on the union, and even tough on suppliers to see that they do their share to keep their prices to you under control.

Probably the best hope for restraint on inflation lies in government action to keep spending down. And only the uninitiated or naive think that's likely.



Where to look for hidden savings

- Fastener value-analysis shows big dollar savings
- Quality improved at same time

If you know what to look for, there are sizable savings to be found in standard fasteners. See what happened when the *RB&W Fastener Man* analyzed fastener usage:

Shown the merits of high strength bolts, a company standardized on them exclusively, saved \$12,000 the first year, \$28,000 the next.

Showing a manufacturer how to substitute high strength bolts for heavy head milled bolts, the *RB&W Fastener Man* pointed to a \$4,500 annual saving on this item alone.

At a plant with 23,000 different fastener items in inventory, more than half were eliminated...cutting costs from buying to assembly.

Where special fasteners were used in heavy equipment, substituting cap screws offered \$13,000 saving on a production run of 500 units.

So it goes. Using high carbon cap screws where costlier socket screws are not really needed... cap screws for studs and nuts in certain applications... replacing machined parts with cold headed pieces... there are plenty of ways to economize.

Take a look at your own fastener usage through the eyes of an *RB&W Fastener Man*. Contact Russell, Burdsall & Ward Bolt and Nut Co.



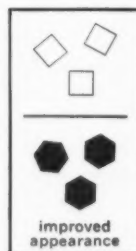
Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** Milwaukee; New Orleans; Denver; Fargo. **Distributors from coast to coast.**

HEX and HEX: a major step in fastener simplification

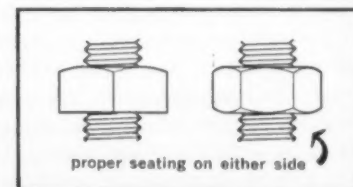
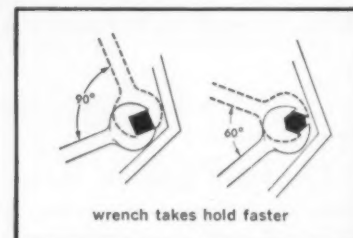
Under the new, *RB&W Hex* and *Hex* program, one hex head bolt and hex nut consolidates the best features of four other frequently used fastening units, all of which are intended to do the same job.

Simplifies inventory, speeds turnover. Streamlines ordering, stocking and usage.

Improves quality and appearance in the popular size range. In heading hex bolts, flow lines in the steel are distorted less than in square bolts. Strength is greater, tolerances closer. Hex heads are more attractive, too.



Cuts weight, reducing handling costs. For example, 1,000 Hex and Hex units in the $\frac{1}{2}$ " x 2" size weigh 25 lbs less than comparable square head bolts and square nuts.



Speeds assembly. Hex permits faster, easier wrenching. Double chamfered hex nuts allow correct assembly from either side.

Cost no more than square head bolts and square nuts. Yet, look at the advantages. Ask the *RB&W Man* about it. Or, write for Bulletin HH-1.

RB&W FASTENERS—STRONG POINT OF ANY ASSEMBLY

Optimism Reappears in Detroit

Hopes Rise as Sales of 1959 Cars Begin to Climb

A solid improvement is expected by automakers, but none foresee a record year.

Total industry output may reach 6.4 million cars and trucks in 1959.—By H. R. Neal.

■ With but one possible exception, automakers would just as soon forget about 1958. They are rolling into the new year in high gear, armed with an array of "new" products and a fresh supply of professional optimism.

Heads of auto companies predict 1959 sales will total 5.5 million automobiles and 900,000 trucks. In mid-December, Chevrolet broke its all-time passenger car record

with an output of 45,305 cars in an effort to make up for production lost in October. The old record of 44,920 was set exactly one year before.

Busy Quarter Ahead—Ward's Automotive Reports forecast first quarter production plans calling for production of 1,644,000 units, fourth highest first quarter on record.

It said all companies will show increases over the 1958 quarter as follows: General Motors, 25.2 pct; Ford, 21.4 pct; Chrysler, 49.1 pct; American Motors, 128.2 pct and Studebaker-Packard, 299.2 pct.

Styles Worked Over—Styling changes were plentiful for 1959

models, but major engineering changes were few. General Motors new models represent the most dramatic styling change ever executed in a single year by that company.

Ford completely revamped its Ford, Edsel and Mercury lines, although the changes are more conservative than GM.

Chrysler lines are facelifted—with the most attention given to Plymouth which now looks like a baby Imperial. Chrysler also introduced the gimmick of the new model year—swivel seats. Unless the plague of labor problems which have beset the firm in recent months can be settled, Chrysler's ability to

1958—An Eventful Year for the Auto Industry

Last year was one of general disappointment for the auto industry, but it wasn't all bad. Many major events took place. Some far-reaching decisions were made

that may set 1958 apart as a crucial year in the history of the industry.

Sales—It was the worst year since 1948 for automakers. Final tally may not reach 4.5 million units.

Small Cars—George Romney and the Rambler, plus increased foreign car imports, proved to the Big Three that there is a sizable market for small cars in the U. S. Consequently, General Motors, Ford, and Chrysler may introduce

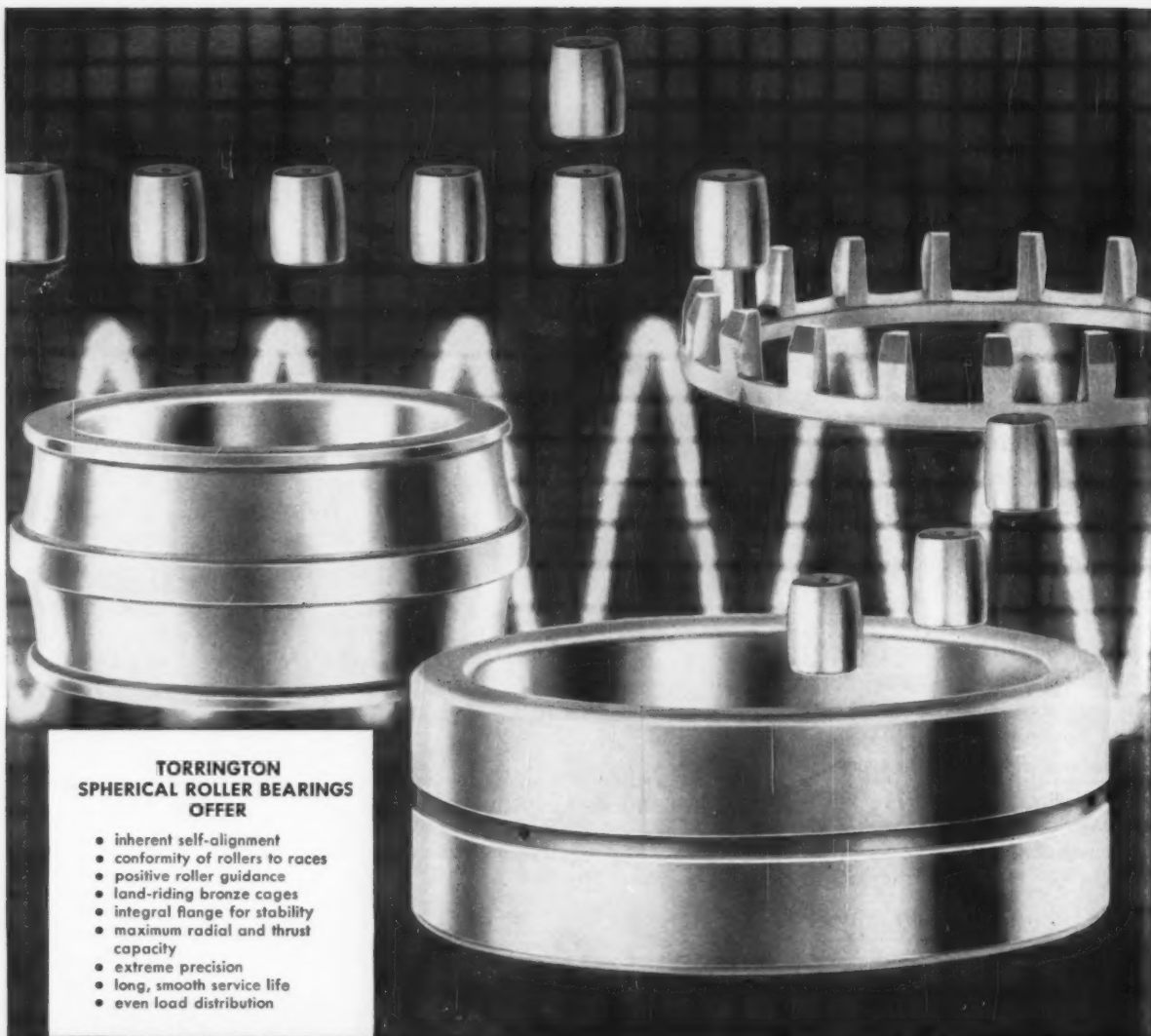
small cars of their own by the end of this year.

Labor—Auto companies came out on top in union contract negotiations. For the first time, the industry presented a united front in talks with the UAW.

Styling—General Motors ditched its long-standing "evolutionary" styling policy and adopted revolutionary body changes in keeping

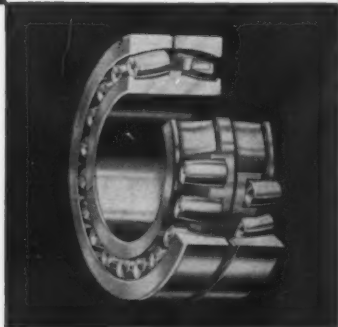
with its competitors. Result: Chevrolet regained the first place sales spot it lost to Ford in 1957.

Organization—Chrysler refuted its decentralization policy, and returned to centralized control. Studebaker-Packard ended its working agreement with Curtiss-Wright Corp., adopted instead an acquisition program to take advantage of tax-loss credits.



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compete for buyers in 1959 will be an academic question.

The Independents—This was no year for American Motors to tamper with success and its argument against styling obsolescence. Styling changes were limited to "refinements." It bolstered its 100 in. wheelbase American line by reviving the station wagon model.

Studebaker-Packard Corp., offering feeble opposition with its full size cars, has followed the lead of AMC. With the introduction of 1959 models it relegated the proud name of Packard to history. In its place is a compact smaller car, the Lark, with little wasted space. And only the sporty Hawk line was retained to continue the Studebaker name on a familiar package.

Milestones—Several events stand out in 1958: The collapse of domestic auto sales, continued expansion of the market for cars smaller than those "standard" U. S. products, and the labor contract negotiations.

The auto industry survived what may amount to the worst sales year for domestic cars since 1948 when just under 3.5 million new cars were registered. Sale of the four millionth new car didn't occur until Nov. 26, an even three months later than in 1957. Of the total, some 332,000 were imported cars.

GM Leads—By the end of the year it is estimated fewer than 4.5 million passenger cars were sold, although final figures compiled by R. L. Polk & Co. won't be available until sometime in February. More than 360,000 of the 1958 sales were foreign cars, almost double the year before figure.

Of the Big Three, only General Motors reported profitable operations in the first three quarters of the year and will report a profit for the last quarter as well. Chevrolet took over the top sales spot, which it had lost to Ford a year ago.

Oldsmobile dominated the medium price class, vaulting over its traditional rival Buick, and capturing fourth position in sales nationally. Cadillac continued its

dominance of the high price market. Even so, sales by the leaders fell behind those of the previous year.

Chrysler Has Problems—Chrysler's bubble that brought profits of more than \$100 million in 1957, burst in 1958 when it ran \$45 million into the red in the first nine months of the year.

Failure to get steady production of new models underway in the fourth quarter will undoubtedly lead to further losses being announced for that quarter. Chrysler's outlook won't materially brighten until it brings out its 1960 models.

Small Car Impact—If another near doubling of foreign car sales this past year hasn't convinced the Big Three there is a substantial demand for a smaller car, then the doubling of sales by American Motors should do the trick. AMC's Rambler sales skyrocketed from 98,000 in 1957 to an expected 196,000 in 1958.

Rambler's bonanza year came in face of sharp declines for the

other automakers. And it produced a sizable \$26 million profit for AMC when its fiscal year ended last Sept. Since then the company has started an expansion program aimed at boosting capacity one-third.

Ford is readying two small models on wheelbases of 107 in. and 114 in. Chevrolet's rear-mounted pancake-engine powered model just needs the go-ahead signal. Chrysler's entry can still make 1960.

Dealing With Labor—In labor contract negotiations, it was finally the year of the automaker. The industry was sinking in the depths of recession. And the industry presented a united front bordering on "industry wide" bargaining.

Auto plants operated from June through September without contracts and experienced comparatively little trouble. When contracts were finally signed, wording and arrangement of benefits were changed, but the final package cost about the same as the auto companies' offers to extend the 1955 contract for two years. And the industry got a desirable three year agreement.

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How the Capital Looks at 1959

Under the Optimism, Many Problems Lurk

The overall improvement in business won't extend to everyone.

Big government spending will continue, bringing the threat of inflation.—By G. H. Baker.

■ The business outlook, as seen by government, is bright. Much brighter than a year ago. Nearly all of Washington's official gages of industrial health are up.

It's to be a year of upward trends—in production, shipments, prices, and costs.

Some Soft Spots—But it's also to be a year of rough competition. And it will be a year of economic paradoxes—some business will thrive while others hunger. Resurgence of the nation's industrial health will not be across-the-board. Most lines are to enjoy a steady upward climb in sales throughout the year. But for others, recovery is still somewhere around the corner.

The cost of national defense seems headed for a rise of at least \$1 billion. Total outlays, as a result, will be around the \$42-billion-a-year mark. (We are now irrevocably committed to spending more than half our national budgets on defense alone.)

Pump Primer—This \$42 billion catalyst, pumped in varying amounts into almost every U. S. industry and equally distributed geographically, is certain to stimulate many now-listless areas of industrial production. New orders, new jobs, more money in circulation will combine to bring the glow of recovery to thousands of communities.

As for political temper, we're in

for a two-year cycle of left-of-center legislation. Republicans and Southern Democrats have been reduced in numbers to scarcely more than a corporal's guard in both Senate and House. The new Congress is drawing up a "want list" of legislation that will inevitably add new billions to the total cost of running the government. This new spending will thereby widen still further the spread between cash income and outgo.

More Inflation Coming—Another cycle of higher costs and higher prices is in the making. Prepare for it now. The equipment and materials your purchasing executives buy in 1959 will carry heavier price tags. Freight charges will be higher. Wages, already on the rise, are to nudge ahead still further.

The government out-of-balance budget will be partly responsible for the inflationary spiral. In the fiscal year that ends next June 30, the

government plans to spend about \$12 billion more than it takes in. This means the U. S. Treasury has to go to the banks and other money markets for loans to make up the difference. Result: An excess of dollars in circulation, with resulting cheapening of the available supply.

Defense Spending Rises — New and costlier weapons will nudge the nation's total defense outlays to around \$42 billion. Actually, military men want much more. They're privately telling congressmen they want an annual defense budget of around \$48 billion. But Congress has to weigh the generals' shopping list against the realities of federal finances. Congress will not insist on a balanced budget this year. But Senate and House leaders are determined to hold down the anticipated deficit to what they consider a "reasonable" figure.

Don't Count on Tax Cuts

■ The clear threat of higher taxes in 1959 is raised by President Eisenhower's budget director, Maurice H. Stans.

Mr. Stans says if the people demand—and the Congress votes—more money than taxes yield, the government will be compelled to recommend higher taxes. "It is time for realism in government finances," the money man declares.

Clearly, there is almost zero possibilities of tax cuts in 1959. Worry in the White House over the \$12 billion gap between government in-

come and outgo is the reason. But this gap is narrowing. So some hope for some reductions in 1960 is not far-fetched, although unlikely.

What we can hope for in 1959, however, is some much-needed adjustments in the depreciation laws. If machinery and equipment builders can convince Senate and House leaders of the genuine need for corrective legislation that exists in depreciation laws, a sizable pick-up in sales (and in corporation taxes paid by tool builders) should take place.



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25-40 heats: "Running between 25 and 40 heats taphole life in the old shop, depending on size of furnace. New shop getting 20-25 heats on the 300 ton furnaces."

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Record Year for Farwest Steel?

Steel Use May Top 1957's Peak Tonnage

Western steel users, with construction industry leading the way, will consume over 6.6 million tons of steel in '59.

Aircraft and missilemaking won't change much, either up or down.—By R. R. Kay.

■ West Coast industry has bounced back from the business slump with amazing resilience.

Farwest business leaders are encouraged about the outlook for 1959. Here's how it looks by industries:

Gains for Steel—Everybody in the Farwest steel business says 1959 should be a record or near record year. The seven Farwestern states will gobble up over 6.6 million net tons. That's only a couple hundred

thousand tons under 1957's peak.

Why the optimism? The mass migration to the Farwest continues without a stop. People need homes, schools, churches, highways, and a lot of products made from steel. As a result the construction industry takes about one-half of the steel used in the West. Other big steel consumers will do well, too: Appliances, machinery, shipbuilding, automotive parts, and ordnance.

More Aluminum—Primary aluminum production in 1959 should hit well above the ½ million ton mark. That's about 10 pct over last year.

There won't be any change in the Farwest's percentage of capacity. The area will still make 30 pct of the nation's output.

Aircraft - Missilemaking — Don't

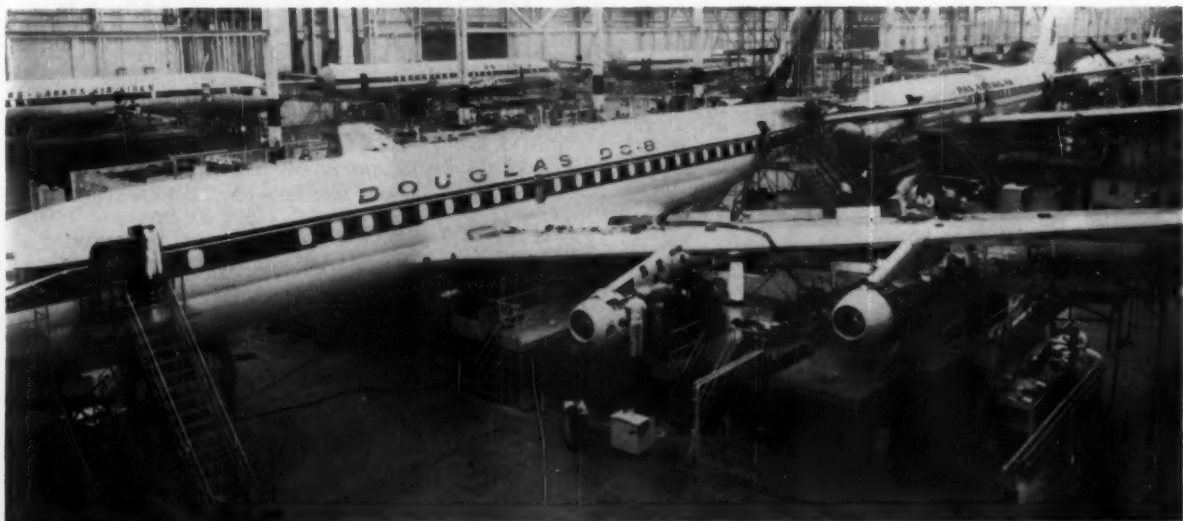
look for much of a change, either up or down. The industry is the most dominant force in the Farwest economy. And it will keep its No. 1 spot.

West Coast companies have a \$7.26 billion backlog. In a typical week they shell out \$44.5 million in payroll checks.

Space vehicles and missiles get most of the headlines today. But manned aircraft are still the backbone of the industry and will be for many years.

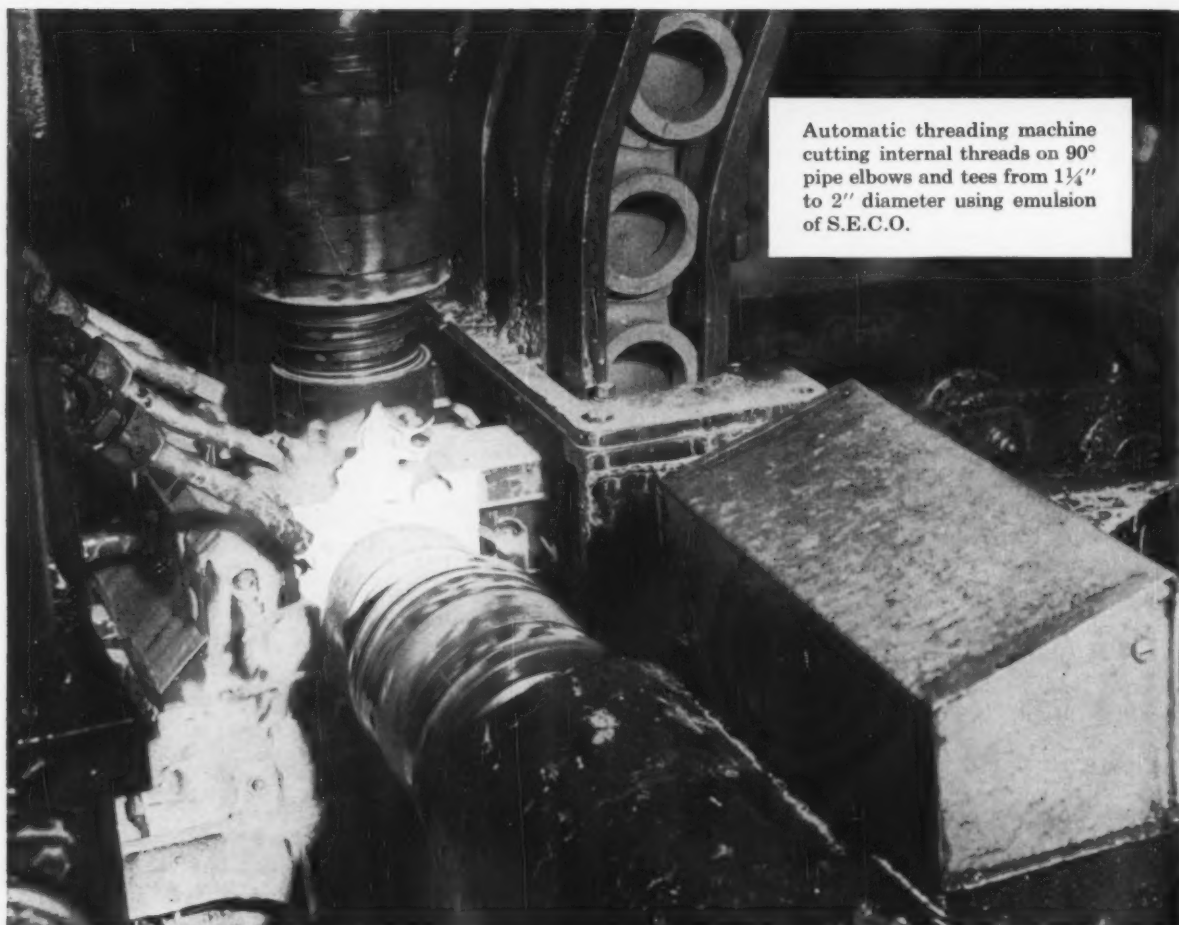
More Missile Work—Of course, there will be stepped-up emphasis on missilemaking. It will sweeten the product mix for the major makers. Before 1960 rolls around, more than one-third of the Coast's industry will be in missile systems.

Important Part of a Large Backlog



STRONG BACKBONE: Despite missile emphasis, manned aircraft, like these DC-8 jetliners, still form

bulk of industry's backlog. Airlines have ordered 140 DC-8's at a cost of more than \$700 million.



Automatic threading machine cutting internal threads on 90° pipe elbows and tees from 1½" to 2" diameter using emulsion of S.E.C.O.

Photo courtesy of Grinnell Corporation

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Builders See Better Days Ahead

Return of Confidence Brings Pickup in Orders

Tool builders are counting on a substantial improvement in sales during 1959.

Need for new machines to cut production costs is a major reason.—By E. J. Egan, Jr.

Machine tool builders are glad to turn their backs on 1958 and eager to welcome the promise of a business upturn for 1959.

During most of last year, the industry lay virtually dormant in a depression—the most serious setback it has had since the 1930's.

Shipments of cutting-type machine tools for 1958 are estimated by the National Machine Tool Builders' Assn. at \$400 million. That's peanuts compared to billings in the two previous years: \$844 million in 1957 and \$886 million in 1956.

Outlook Improving — Shipments of forming-type machine tools also slumped to an estimated \$100 million last year, as compared to \$244 million in 1957 and \$309 million in 1956.

But things are looking up. "New orders turned upward slightly in the latter part of the year," notes Ralph J. Kraut, NMTBA president who also heads the Giddings & Lewis Machine Tool Co., Fond du Lac, Wis.

Cost Factor Important—"Various factors indicate a continuance of this trend," Kraut observes. First on his list is a return of business confidence. He believes "the current upturn in product sales . . . should revive plant modernization plans."

His second factor is "the imperative need of reducing production costs." He traces part of this pressure to high wage rates in the U. S.,

plus the threat of invasion of American markets by products made abroad. But he says this isn't the whole story.

No Letup on Research—Europeans, helped by accelerated depreciation allowances, are modernizing their plants faster than we are, he notes. "The need for correcting this situation will inevitably stimulate domestic machine tool purchases," he predicts.

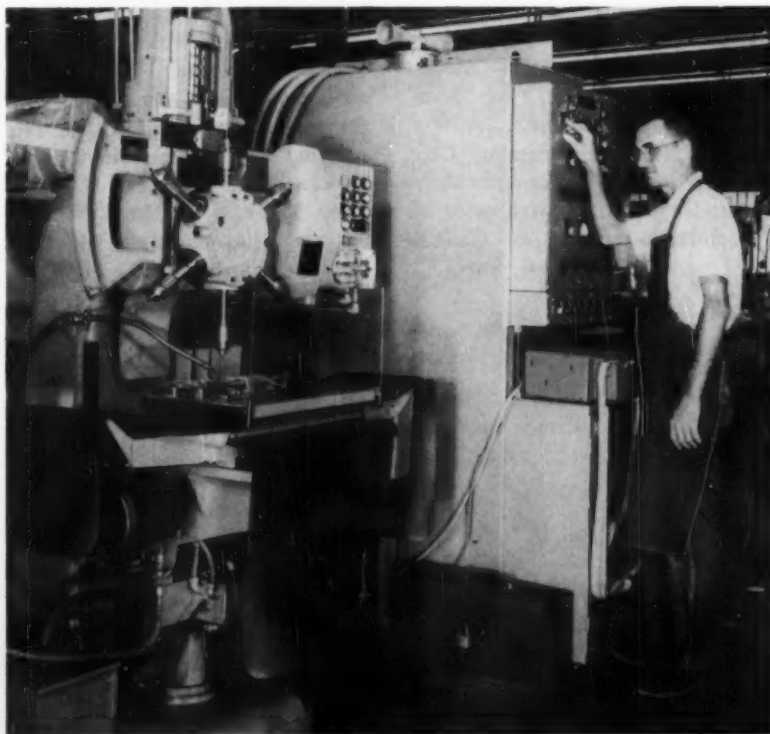
As a third factor pointing toward a better 1959, Kraut emphasizes the machine tool industry's "ac-

celerating program of product redesign and development."

Despite slumping sales, builders have not let up on research, invention, and the application of new principles to their products. "Advances in automatic operation and in various types of controls are remarkable," Kraut affirms.

Response Expected—"With business confidence returning," he says, "manufacturers in the metalworking field will certainly take advantage of the opportunities offered by the machine tool models of 1959."

Numerical Controls to Spark Upturn?



FOR SHORT RUNS: Builders are betting heavily on wider use of numerical controls, here applied via punched tape to a six-spindle drill.

INDUSTRIAL BRIEFS

Working at Lawmaking — The 1959 Aircade of the Chamber of Commerce of the U. S., will launch in February a nation-wide effort to help business men work more effectively with the new Congress on major legislative issues. The Aircade delegation will present a series of 12 all-day meetings in principal cities coast-to-coast.

Popular Subject—How to cut costs in designing and processing gray iron castings will be the subject of one-day clinics sponsored throughout the country by the Gray Iron Founders' Society, Cleveland. The society will hold training clinics for 24 metalworking centers in 1959.

Philadelphia Branch — The Alvey-Ferguson Co., manufacturers of engineered conveying systems and equipment with headquarters in Cincinnati, O., is opening a direct factory branch office in Philadelphia. J. R. Keogh, Jr., has been named manager.

Talco Joins Gabriel — Stockholders of The Gabriel Co., Cleveland, have approved the acquisition of The Talco Engineering Co., Mesa, Arizona, producer of rocketry and missiles devices, at a price of \$2 million, payable in Gabriel stock over the next two years.



Relief for Straphangers — The New York City Transit Authority has placed an order with American Car and Foundry, a division of ACF Industries, Inc., for 110 cars to serve New York City's subway riders. To cost \$11.7 million, the cars will service the Interborough Rapid Transit Div. when deliveries begin during the summer of 1959.

Going to the Fair—A complete industrial workshop, contributed by Rockwell Mfg. Co., Pittsburgh., will be a major exhibit at the first U. S. solo trade fair in New Delhi, India, Dec. 10-Jan. 10. Aluminum Co. of America and J. S. Fecher, Inc., are two other Pittsburgh firms contributing products to the trade exhibit.

Minerals Showpiece — ASM Chapters and organizations in the metalworking industry are being invited by the American Society for Metals to participate in a display of native minerals to be formed within an imaginative mineral garden. It is to be a major feature of the new ASM headquarters office building being erected east of Cleveland.

Spreading Out—Sundstrand Machine Tool Co., Rockford, Ill., has acquired the machinery division of Hanson-Whitney Co., Hartford, Conn. Transaction covers manufacturing and sales rights to Hanson-Whitney thread milling machines but not any other products made by the eastern company. Machines in the line will be manufactured at Sundstrand's plant in nearby Belvidere.

Translations Made Easy — The Dept. of Commerce will publish a semi-monthly periodical, Technical Translations, as a source of information in the U. S. on Russian and other technical translations available to science and industry. It lists material from U. S. Government sources, SLA, cooperating foreign governments, educational institutions, and private sources.

Nuclear Life Guards — Vard, Inc., Pasadena, has signed a new contract for close to \$60,000 with Allis-Chalmers Mfg. Co. to design and build a number of regulating and safety rod drives. The drives are for an experimental nuclear reactor of the Naval or "swimming pool" type.

The Endless Search—American Brake Shoe Co. is building a \$2 million research center in Columbus, O. The facility will be known as Denison Hydrodynamics Research Center of American Brake Shoe Co., and will be operated by the Denison Engineering Div. The Center is expected to be in operation by summer, 1959.

New Plot, Same Cast—Edgcomb Steel & Aluminum Corp., Hillside, N. J., offers a new Tooling Products Stock List that classifies tool steels by standard AISI specifications rather than brand names. The stock list is available upon request from the corporation.



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MEN IN METALWORKING



T. D. Burley, named manager, high temperature steel sales, The Carpenter Steel Co., Reading, Pa.

R. G. Belote, appointed vice president, industrial relations and **G. J. Papas**, appointed vice president, purchasing, Rheem Manufacturing Co., New York.

Joseph Scodro, promoted to controller and **R. A. Alitto**, promoted to assistant secretary, La Salle Steel Co., Hammond, Ind.

W. H. Stewart, named manager, engineering services, Refractories Div., H. K. Porter Co., Inc., Pittsburgh headquarters.

D. C. Haney, appointed superintendent and **H. L. Kells**, assistant superintendent, Fuel and Power Dept., Youngstown district, The Youngstown Sheet & Tube Co.



C. J. Moore, appointed general sales and marketing manager, Exide Industrial Div., The Electric Storage Battery Co., Philadelphia.

R. E. Sperber, appointed assistant to the president, The O. Hommel Co., Pittsburgh.

R. H. Funke, appointed comptroller, Chrysler and Imperial Div., Chrysler Corp.

Following appointments are within the General Accounting Dept. of Republic Steel Corp. **W. H. Claire**, named manager, Invoicing and Accounts Receivable Div.; **R. K. Bailey**, appointed manager, Administrative Procedure Div.

Jacint Calderazzo, named director, plant security, Weirton Steel Co., Div. of National Steel Corp.

T. R. Gerosky, appointed district sales manager, Chicago territory, American Chain Div., American Chain & Cable Co., Inc., York, Pa.

New appointments at the Cincinnati steel service plant of Joseph T. Ryerson & Son, Inc., are as follows: **A. H. Bader**, appointed asst. to the general manager; **N. R. Miller**, named manager, General Order and Merchandise Procurement Depts.; **T. G. Mates**, named manager, Work Order Dept.; **L. G. Brinker**, appointed supervisor, merchandise records.



T. W. Morrison, appointed assistant to the vice president, engineering and research, SKF Industries, Inc., Philadelphia.



E. L. Mills, appointed district manager, Duluth district office, Link-Belt Co.

Lloyd Rowe, will head the Philadelphia regional sales office, Assembly Products, Inc., Chesterland, O.; **J. D. Saint-Amour**, named sales manager, Metronix, Inc., Chesterland, O., a wholly-owned subsidiary of Assembly Products.

D. C. Kane, named sales manager, Western Division plant, Industrial Tectonics, Inc., Compton, Calif.

S. B. Lamica, appointed manager, Jacksonville, Fla., district, Allis-Chalmers Industries Group;



J. D. Paschal, appointed manager, quality control, Alemite and Instrument Div., Stewart-Warner Corp., Chicago.

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"Our match book program repeats our advertising over and over again—at low cost—to the pinpointed group of architects, contractors and top executives of large corporations who can specify our products."

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1. AN EXTRA DIMENSION . . . takes it out of flat 2-dimensions and gives it the third dimension of depth . . . something tangible to put in the prospect's hand.
2. NEW MAGNITUDE . . . by constant exposure of the selling message.
3. NEW PENETRATION . . . through the high utility of Diamond Book Matches.



Book Match Advertising Dept.

DIAMOND MATCH Division of Diamond Gardner Corp., 125-C Paridon St., Springfield, Mass.

Wainwright Holt, Jr., appointed sales manager, centrifugal and axial compressors, Allis-Chalmers.

S. A. Lewis, appointed manager, technical sales service, Walworth Co.

M. E. Johnson, appointed manager, Washington office of AC Spark Plug, Electronics Div. of General Motors Corp.



R. P. Sayers, named Chicago district sales office manager, Link-Belt Co.

Frank Nerney, promoted to manager, Southeastern sales territory, Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo, N. Y.



J. P. Moffat, Jr., appointed chief engineer, Electro Mechanical Instrument Div., Consolidated Electrodynamics Corp., Pasadena, Calif.

W. J. Hartland, becomes district sales manager at Vancouver, B. C., United Air Lines, Chicago.



W. E. Kennedy, appointed manager, sales, Kenilworth, N. J., plant, Stainless and Strip Division, Jones & Laughlin Steel Corp.

D. J. Shellenberger, promoted to supervisor, chemical engineering services, Jones & Laughlin Steel Corp.

R. D. Ferguson, appointed district sales engineer, Atlanta, Ga., Ingalls Iron Works Co. of Birmingham, Ala.



J. T. Gartrell, appointed general manager, Mirawal Div., Birdsboro Steel Foundry & Machine Co., Inc., Birdsboro, Pa.

W. J. Busteed, appointed manager, quality control, Electro Mechanical Instrument Div., Consolidated Electrodynamics Corp., Pasadena, Calif.

A. T. Hanson, Jr., named manager, Chrysler Corp.'s New Process Gear Div. at Syracuse, N. Y.

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AND
MECHANICAL LEATHERS**

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The *Mellowes* Co. puts KEYSTONE quality in a package

Unique lock washer merchandising wins customers . . . Keystone uniformity keeps them!

To sell lock washers, The Mellowes Co., Milwaukee, Wisconsin, puts them into new, functional "Job-Pak" packages and "Coin-Pak" rolls that reduce handling expenses, simplify counting and weighing, eliminate spilling and the mixing of sizes and permit speedier inventories.

To keep their customers "sold," The Mellowes Co. specifies Keystone Lock Washer Wire. This forward-looking firm makes 250 sizes of helical spring lock washers out of Keystone Wire. Here are some of the reasons why The Mellowes Co. prefers Keystone Wire:

- Uniform diameter assures accurate dimensions when cold rolled into lock washer wire.
- Uniform structure completely spheriodized for easy coiling and close control of inside and outside diameters.
- Uniform chemical analysis and grain size provides consistent hardness in heat treating.

The Keystone research metallurgists worked hand-in-hand with The Mellowes Co. to develop a special quality of wire for the manufacture of lock washers. The result has been a quality product manufactured at the lowest possible cost.

Your Keystone Wire Specialist and the facilities of our metallurgical department are at your service. Call us today to help solve your wire problems.

Keystone Steel & Wire Company, Peoria 7, Illinois



KEYSTONE WIRE FOR INDUSTRY

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Jones

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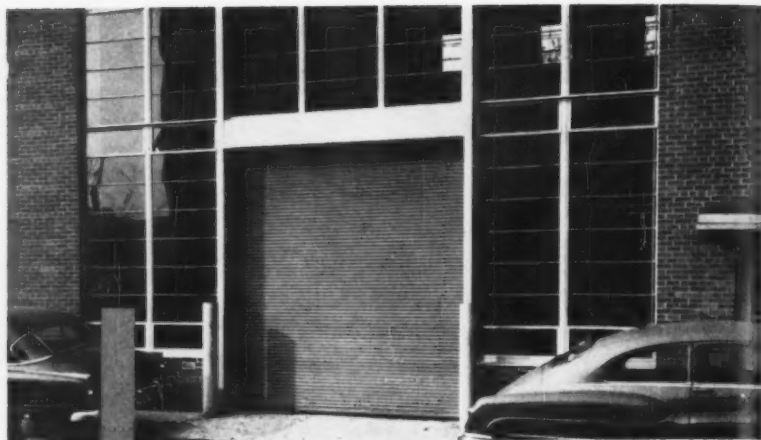
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1, 1959



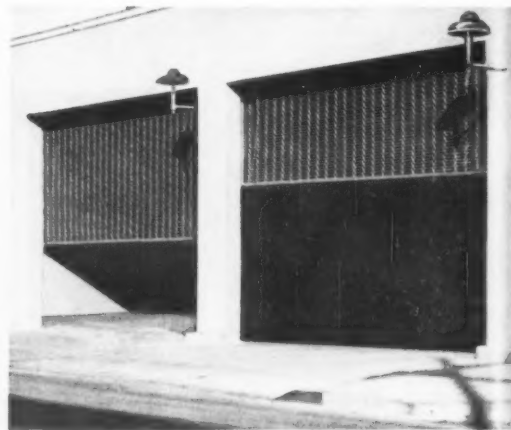
Kinnear Rolling Doors, by allowing for any required track extension, permit fullest use of hoist, crane, conveyor and lift-truck equipment.



Kinnear Rolling Doors eliminate all problems where wall areas beside or above doorways are designed to provide a view or transmit light. Kinnear Doors clear the entire door area, yet never interfere with any function or usability of surrounding floor, wall, or ceiling, either inside or outside the building.



Kinnear Rolling Doors deliver full efficiency whether mounted on interior or exterior walls. Mounted outside, they permit full clearance of ceiling-high openings . . . also cut costs of new buildings by reducing door headroom requirements to zero!*



Kinnear Rolling Grilles combine coiling upward action of Kinnear Rolling Doors with a rugged assembly of steel bars and links in attractive "openwork" design. They prevent trespassing without blocking light, air, or vision.

How you save space, speed traffic and cut upkeep with

KINNEAR ROLLING DOORS and Rolling Grilles

Kinnear *originated* the door with the curtain of interlocking steel slats. It has so many advantages that only a few highlights can be given here.

For example, note that *all* surrounding floor and wall space remains clear and usable at all times, whether the door is opened, closed, or in action.

The closed door guards the opening with a *continuous all-metal curtain*—extra protection against intruders, vandals, troublemakers as well as against wind, weather and fire.

Every Kinnear Door is *Registered*. Full details of all parts are kept permanently in Kinnear's fireproof vaults. With

parts *always* replaceable, your doors will never be "orphans".

For maximum durability Kinnear's special hot-dip galvanizing coats the entire curtain with a full 1.25 ounces of pure zinc per square foot of metal (ASTM standards). Kinnear adds a special Paint Bond that permits immediate, thorough coverage and lasting adhesion of field-applied paint.

Kinnear Rolling Doors are available for old or new buildings, with motor, manual or mechanical operation. Write for complete information.



Also available: Interlocking-slat Kinnear Doors of modified design, for COUNTER SHUTTERS—widely used in cafeterias, serving counters, tool and parts cribs, etc.

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Factories: 1760-80 Fields Avenue, Columbus 16, Ohio

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KINNEAR

ROLLING DOORS

The IRON AGE

Survey Report 1959

Executives Forecast '59:

**Sales, Profits
Wages, Selling Prices**

And Report Year-End:

**Order Backlogs
Raw Material Inventories
Stocks of Finished Goods**

■ Here is a special report by metalworking executives on the 1959 business outlook. It is based on a 20-industry survey made by The IRON AGE during mid-November.

We wanted to find out management's appraisal of the sales and profit picture in the new year. We also wanted to know how they felt about raising prices and whether they expected higher wage costs. We asked for a year-end report on their order backlogs, raw materials inventories, finished goods on hand—and how they compared with a year ago.

The answers to the survey cover a cross section—by indus-

try and plant size—of 20 metalworking industries. Not only are these metalworking companies, but many of them are suppliers to metalworking as well.

The forecasts were made, in almost every case, by top management people in the companies surveyed. Replies were received from over 33 pct of all plants in these 20 industries employing 50 or more workers.

The first part of this report deals with the overall outlook for the 20 industries surveyed. Following this are reports on individual industry groups. Realistic comments from top executives are given at the end of each industry section.

**For Overall Outlook and
Reports by Industry
See Following Pages:**

20-INDUSTRY OUTLOOK	P. 154
Construction Machinery	P. 160
Conveyors, Cranes and Hoists	P. 164
Copper and Brass Rolling	P. 168
Electric Motors	P. 172
Controls and Switchgear Apparatus	P. 176
Fasteners	P. 180
Gray Iron Foundries	P. 184
Heat Treating Equipment	P. 188
Industrial Trucks	P. 192
Instruments	P. 196
Machine Tools	P. 200
Malleable Iron Foundries	P. 204
Nonferrous Foundries	P. 208
Pumps and Compressors	P. 212
Stampings	P. 216
Steel Forgings	P. 220
Steel Foundries	P. 224
Welding Equipment	P. 228

Look for Higher Prices in '59

Price increases averaging 5 pct are planned by about half the companies surveyed.

Forty pct will hold the line while only 9 pct see price cuts coming up.



Prices for metalworking products are on the uptrend. Slightly over half those surveyed plan to raise prices an average of 5 pct this year.

Reasons for the reported increases are not too hard to figure. Undoubtedly, some companies delayed price hikes in 1958. Now with business looking better, they think the market stands a better chance of absorbing them.

Added to this is the necessity to get out from under the cost-price-profit squeeze.

Wages and materials costs are still going up. Last year saw waves of severe price cutting in some areas. A number of marginal producers were washed out and even well-established companies had difficulty keeping profits above water.

With demand firming in some

markets and stability returning to others, higher prices can be expected to follow. However, 40 pct of survey respondents say they will hold the price line in 1959. Some fear price increases will take the edge off the market. They feel buyers may pursue more cautious purchasing policies and consequently place fewer orders.

Only 9 pct see a price drop averaging 3 pct this year. Significantly, most of these reports are from plants employing less than 500 workers. Planned price reductions were reported by only six firms in the 500-or-more employee group.

Those planning price cuts give intense selling competition and the inroads of new competitive materials and products as main reasons for holding the line.

**Q: What's the Trend
In Selling Prices
For '59?**

Effect of plant size on responses:

Plant Size	Expected Increase:
50 to 99 workers	5 Pct
100 to 249 workers	5 Pct
250 to 499 workers	5 Pct
500 to 999 workers	5 Pct
Over 1000 workers	6 Pct

Plant Size	Expected Decrease:
50 to 99 workers	5 Pct
100 to 249 workers	6 Pct
250 to 499 workers	9 Pct
500 to 999 workers	20 Pct
Over 1000 workers	—

**Charts show how opinions vary--
by percent of replies:**

About 51 Pct said
5 Pct UP

About 40 Pct said
NO CHANGE

About 9 Pct said
3 Pct DOWN

Prices

0 Pct Replies 25 50 75 100

Pct Change

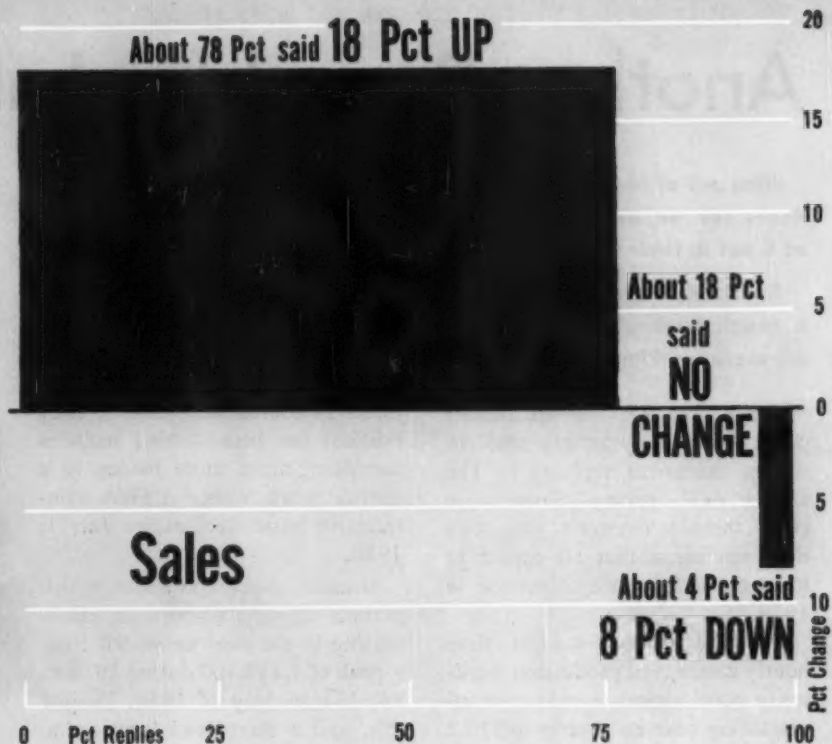
Effect of plant size on responses:

Plant Size	Expected Increase:
50 to 99 workers	20 Pct
100 to 249 workers	17 Pct
250 to 499 workers	18 Pct
500 to 999 workers	18 Pct
Over 1000 workers	16 Pct

Plant Size	Expected Decrease:
50 to 99 workers	20 Pct
100 to 249 workers	19 Pct
250 to 499 workers	20 Pct
500 to 999 workers	18 Pct
Over 1000 workers	10 Pct

**Q: How Will Your
'59 Sales Volume
Compare with '58?**

Charts show how opinions vary--by percent of replies:



Survey Report 1959 | Sales Volume

Sales Volume Heads Upward

Sales forecasts for 1959 are highly optimistic. Some 78 pct say volume will rise 18 pct this year.

Only 4 pct forecast an average 8 pct drop. About 18 pct see no change compared with 1958.

■ The sales outlook for 1959 is considerably brighter than last year. Then only 28 pct of those surveyed could see higher sales on the horizon. Now 78 pct say they look for sales volume to go up an average of 18 pct this year.

Coupled with this is the fact that

only 4 pct predict an average drop of 8 pct in sales this year. In contrast, some 32 pct called a downturn of 15 pct for 1958 at the beginning of last year. Some 18 pct report little or no change in sales volume in 1959.

The optimistic tone is reflected in metalworking companies of all sizes, with the smaller firms expressing the most confidence.

Surprisingly enough, a good part of this enthusiasm comes from those industries which were hardest hit last year. With the overall economy showing signs of improvement, they may reason the only direction sales can go are up.

But from the comments of metalworking executives, it's evident that higher sales forecast for 1959 are based on more than wishful thinking.

One company after another reports greater effort put into total marketing programs: There is more emphasis placed on determining customer needs more closely; more time is being spent back-stopping and retaining field salesmen; new markets are being sought to replace dwindling-profit areas.

Those who laid their plans early say they now expect to cash in on new product development programs.

Another Round for Labor?

Nine out of ten survey respondents see an average increase of 5 pct in their wage costs.

Steel and its union are in for a tough fight which will affect all metalworking.

■ Wage costs will be up another 5 pct again this year, say nine out of ten executives replying to The IRON AGE survey. Since wage costs include overtime pay, this does not mean that all expect to hand out a 5 pct wage increase in 1959.

For the record, straight-time hourly earnings of production workers in nonelectrical machinery manufacturing rose an average of 10.2 pct in the past two years. This is

based upon a U. S. Dept. of Labor survey which showed that declines in the amount of premium pay for overtime tended to offset this raise.

With United Autoworkers contracts out of the way, the major influence in many metalworking plants this year will be David J. MacDonald's United Steelworkers. They are out for bear—which includes everything from more money to a shorter work week. USWA contracts in basic steel expire July 1, 1959.

Because of unemployment, which permits skipping union dues, membership in the steel union fell from a peak of 1,212,700 during 1956 to 848,131 in May of 1958. Despite this, and a short-lived insurrection in the union back in September, Mr.

MacDonald is solid with the membership. He will have practically a free hand in bargaining.

For their part, steel companies will be under heavy pressure to take a strike rather than give an increase that would mean higher prices. Right now the odds favor a strike.

But unless steel users build inventories at a faster rate than they are now doing, many will find themselves at the July 1 strike deadline date with less than they had at the end of 1956 steel strike. If a strike comes in steel this year this could lead to a reversal by steel users after it starts—to a "settle at any cost" philosophy.

Either way, it promises a tough bargaining session.

Profits Head for a Comeback

Metalworking's profits picture looks a lot brighter. Gains of 23 pct over last year are seen by 60 pct of companies.

Fewer firms, 13 pct, say this year profits will fall 12 pct below 1958 levels.

■ Profits for most metalworking companies are expected to be healthier this year than last. Poor earnings reports during 1958 pretty much reflected industry opinion at the beginning of the year.

Only 23 pct saw any chance for profit improvement at the beginning of 1958. This year more than

half, 60 pct, say profits will increase about 23 pct.

Far fewer companies expect a profit decline than they did last year when some 46 pct foresaw profit drops averaging about 17 pct. For 1959, only 13 pct of those surveyed anticipate an average drop of 12 pct. Another 27 pct see no change in the profit picture for 1959.

Profits, of course, are intimately tied in with sales volume and selling prices. With both of these items on the upswing, profits can be expected to ride along with them.

But added to these factors, is the overall industry drive to lower costs. A good many companies are over-

hauling their cost systems and installing more effective control methods. Others are paying more attention to unprofitable areas in overall company operations.

In some cases, this calls for the installation of more productive equipment. A goodly number say improved capital equipment will definitely make their profit ratios look better this year.

Some companies are looking to other fields as a source of higher profits. Markets now dying on the vine are being bypassed in favor of more lucrative fields created by the fast-changing technological developments in industry.

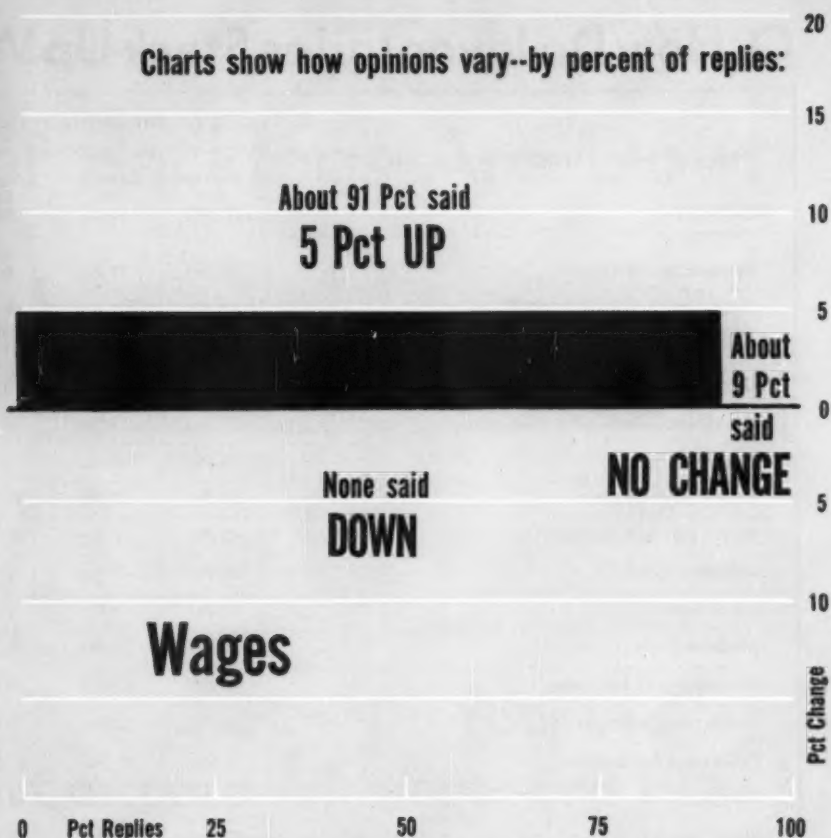
Q: How Much Will Wage Costs Vary This Year?

Effect of plant size on responses:

Plant Size	Expected Increase:
50 to 99 workers	5 Pct
100 to 249 workers	5 Pct
250 to 499 workers	5 Pct
500 to 999 workers	4 Pct
Over 1000 workers	4 Pct

Plant Size	Expected Decrease:
50 to 99 workers	5 Pct
100 to 249 workers	5 Pct
250 to 499 workers	10 Pct
500 to 999 workers	—
Over 1000 workers	—

Charts show how opinions vary--by percent of replies:

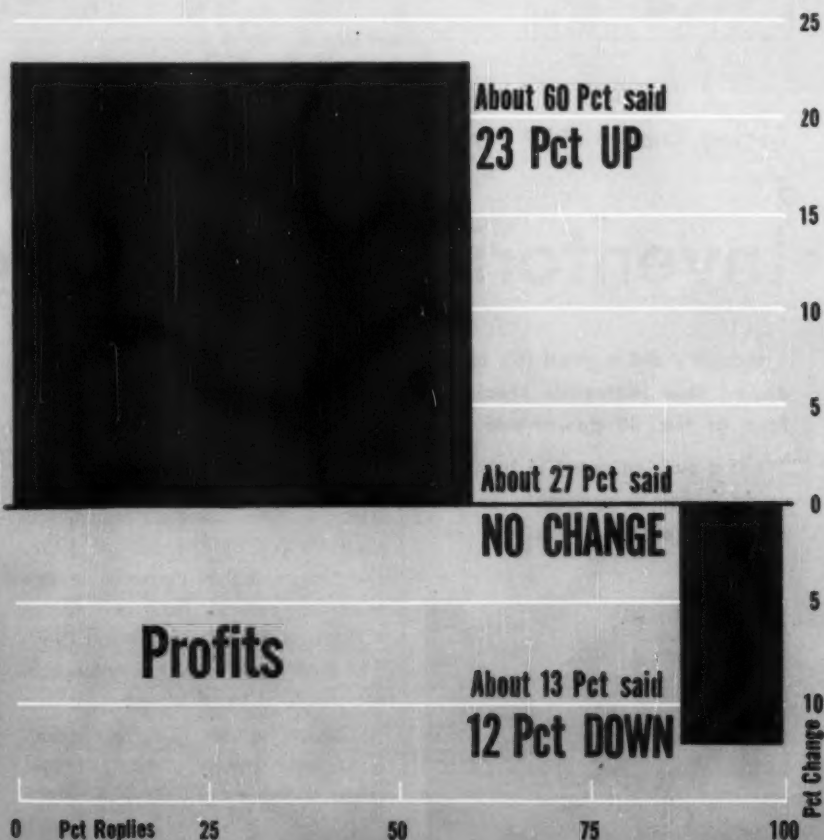


Effect of plant size on responses:

Plant Size	Expected Increase:
50 to 99 workers	23 Pct
100 to 249 workers	22 Pct
250 to 499 workers	25 Pct
500 to 999 workers	29 Pct
Over 1000 workers	19 Pct

Plant Size	Expected Decrease:
50 to 99 workers	20 Pct
100 to 249 workers	18 Pct
250 to 499 workers	17 Pct
500 to 999 workers	13 Pct
Over 1000 workers	28 Pct

Q: What is Your Profit Outlook For 1959?



Q: How Do Inventories Stack Up With a Year Ago?

Replies by Industry, Weighted by Plant Size INDUSTRY:	Raw Materials			Finished Goods		
	Below End of 1957	About the Same	Above End 1957	Below End of 1957	About the Same	Above End 1957
Construction Machinery	63 Pct	31 Pct	6 Pct	66 Pct	26 Pct	8 Pct
Conveyors, Cranes and Hoists	88 Pct	11 Pct	1 Pct	74 Pct	24 Pct	2 Pct
Copper and Brass Rolling	12 Pct	67 Pct	21 Pct	—	70 Pct	30 Pct
Electric Motors	60 Pct	35 Pct	5 Pct	44 Pct	37 Pct	19 Pct
Controls and Switchgear Apparatus	71 Pct	19 Pct	10 Pct	68 Pct	29 Pct	3 Pct
Fasteners	33 Pct	34 Pct	33 Pct	33 Pct	29 Pct	38 Pct
Gray Iron Foundries	51 Pct	37 Pct	12 Pct	41 Pct	54 Pct	5 Pct
Heat Treating Equipment	62 Pct	7 Pct	31 Pct	26 Pct	50 Pct	15 Pct
Industrial Trucks	82 Pct	17 Pct	1 Pct	67 Pct	19 Pct	14 Pct
Instruments	84 Pct	9 Pct	7 Pct	61 Pct	26 Pct	13 Pct
Machine Tools	84 Pct	12 Pct	4 Pct	45 Pct	23 Pct	32 Pct
Malleable Iron Foundries	43 Pct	41 Pct	16 Pct	31 Pct	39 Pct	30 Pct
Nonferrous Foundries	43 Pct	39 Pct	18 Pct	47 Pct	40 Pct	13 Pct
Pumps and Compressors	75 Pct	12 Pct	13 Pct	64 Pct	19 Pct	17 Pct
Stampings	65 Pct	23 Pct	12 Pct	39 Pct	47 Pct	14 Pct
Steel Forgings	72 Pct	11 Pct	17 Pct	38 Pct	51 Pct	11 Pct
Steel Foundries	66 Pct	22 Pct	12 Pct	52 Pct	40 Pct	8 Pct
Welding Equipment	73 Pct	23 Pct	4 Pct	36 Pct	64 Pct	—

Survey Report 1959 Inventories

Inventories Are Riding Bottom

Industry did a good job in reducing raw materials stocks in face of the '58 downtrend.

But a sudden spurt in business could start a scramble to replenish depleted stocks.



Inventory reductions, well under-way at the beginning of the year, continued at a heavy rate all through 1958.

Only five of the reporting industries cut raw materials stocks less than 60 pct by the end of 1958. For the most part cutbacks in raw materials ranged from 60 to as high as 88 pct below year-end 1957. The data in the accompanying table are weighted by plant size.

Leaders in raw materials reductions were manufacturers of machine tools, instruments, industrial

trucks, conveyors, cranes and hoists.

Raw materials inventories have been riding along at rock bottom for some time. A sudden spurt in business could start a scramble among manufacturers to replenish depleted stocks.

Inventories of finished goods on hand at the end of the year pretty much followed the pattern of raw materials. Those gaging finished stocks closest to demand include makers of construction machinery pumps, controls, industrial trucks and instruments.

Order Backlogs Are Down



Few metalworking groups showed gains in order backlogs last year.

Most reported drops in orders on hand from 10 to 30 percent below year-end 1957.

■ Backlogs of orders for metalworking products dropped steadily during 1958. With few exceptions, most of the industries report orders on hand at year-end 1958 below those of 1957 at the same time.

The order backlog table shown here pretty much tells the story. Only five industries reported higher backlogs. Leading these are malleable foundries with a 27-pct improvement over 1957 and brass mills with a 20-pct gain reported.

The backlog table, like the inventories table opposite, is weighted by plant size. This means that a company employing 1250 workers and having a 20-day backlog receives ten times the weight as a 125-employee company with the same backlog.

Some Show Gains — Electric motors, welding equipment and fasteners showed order backlogs gains over 1957 of 11, 11 and 3 pct respectively.

Hardest hit industries during the past year were machine tools, steel

and gray iron foundries, instruments, conveyors, cranes and hoists. Order backlogs for these groups fell anywhere from 20 to 30 pct below year-end 1957.

Those suffering the least in the year-to-year comparison of days backlog on hand include makers of pumps and compressors, heat treating equipment, and industrial trucks. Weighted backlogs in these industries dropped less than 10 pct during 1958.

See Pickup — Order backlogs are expected to show steady improvement throughout the coming year. Higher sales volume predicted by metalworking executives surveyed on the 1959 business outlook will result in lengthening delivery times and a return to more normal order backlogs and schedules.

This will result in less overtime for the fewer workers now emulating their cost systems and in developments in industry.

Q: How Do Your Backlogs Compare With Year-End 1957?

(Average backlogs in various sectors of metalworking, in days)

INDUSTRY:	Number of Days Backlog		Percent Change
	End of 1957	End of 1958	
Construction Machinery	95	77	-19 Pct
Conveyors, Cranes, and Hoists	117	85	-27 Pct
Copper and Brass Rolling	25	30	+20 Pct
Electric Motors	64	71	+11 Pct
Controls and Switchgear Apparatus	129	108	-16 Pct
Fasteners	32	33	+ 3 Pct
Gray Iron Foundries	33	25	-24 Pct
Heat Treating Equipment	103	97	- 6 Pct
Industrial Trucks	79	72	- 9 Pct
Instruments	89	68	-24 Pct
Machine Tools	89	57	-36 Pct
Malleable Iron Foundries	22	28	+27 Pct
Nonferrous Foundries	61	54	-12 Pct
Pumps and Compressors	78	75	- 4 Pct
Stampings	40	34	-15 Pct
Steel Forgings	69	56	-19 Pct
Steel Foundries	84	44	-31 Pct
Welding Equipment	36	40	+11 Pct

A Rough Road for Construction

It isn't the most optimistic group, but makers of construction and mining equipment look for better things this year.

But competition is tough and price policies are difficult.

■ You will find less general agreement among makers of construction and mining equipment than in most of the major metalworking categories.

Probably because it is such a wide field, with many individual markets not even overlapping, opinions are divergent. Another factor is the failure of the vitally-important Federal highway program to clarify and develop along expected lines.

Altogether, manufacturers of these products are also less optimistic than the overall average. In over-

all metalworking, 60 pct expect profits to go up. In the construction and mining equipment category, only a scant majority of 53 pct expect profits to improve.

But those who do forecast improved profits indicate that the gain will be a healthy one. They look for a fat 35 pct improvement in earnings.

On the sales outlook, 68 pct expect volume to go up. This is a big improvement from a year ago when only 29 pct believed an improvement was in sight.

The manufacturers aren't entirely happy about some of the aspects of competition either. Complaints of unrealistic price cuts are heard and many believe the industry has been invaded unnecessarily by too many producers.

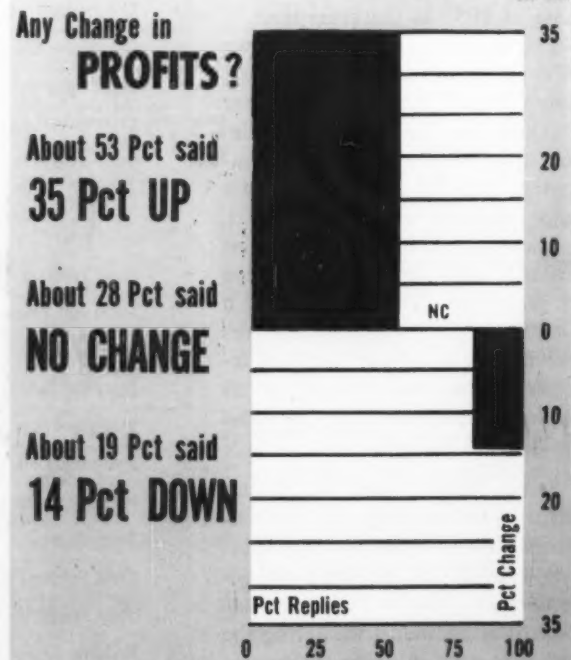
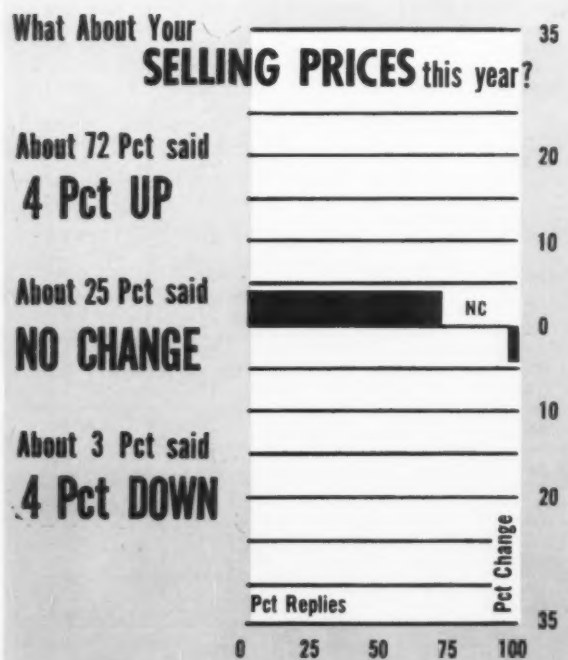
Takers of mining equipment had a bad year, with coal mining par-

ticularly staying out of the market for new equipment. But with the outlook improving, they hope miners will see the need to replace and improve on their equipment.

The highway program is still looked to for major orders for earth-moving and other highway building equipment.

Because much of the equipment is heavy and requires long lead time, backlogs (weighed on plant employment) are still out to 77 days. However, that represents a 19 pct decline during the year.

In inventories, two-thirds of the manufacturers reduced their stocks of raw materials and finished products, with slightly less than one-third holding the same inventory level. Only a very few increased their stocks of either materials or finished goods.

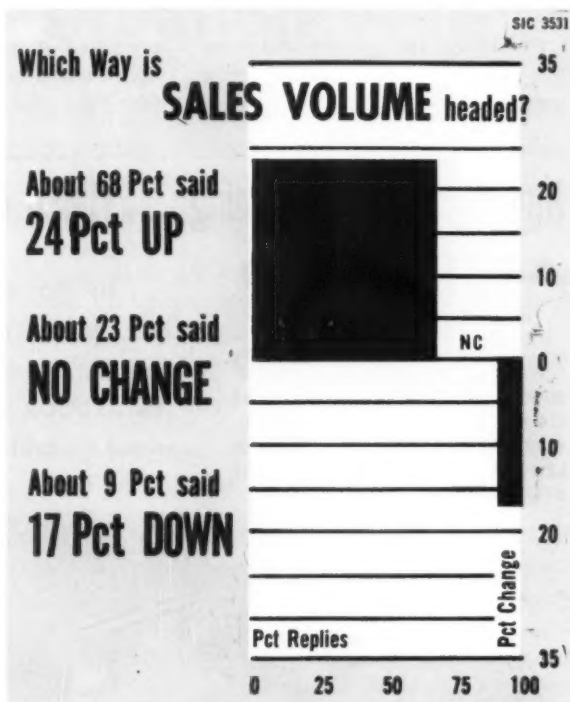
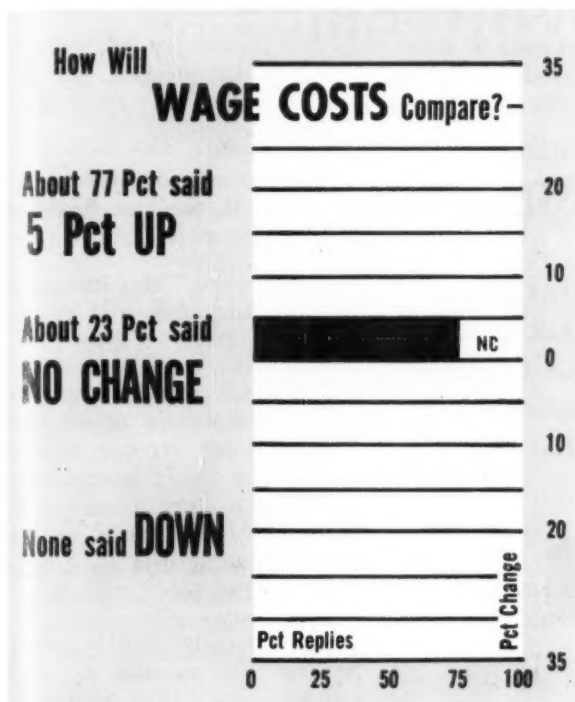


Equipment Makers

SIC 3531

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	31 Pct	45 Pct
100 to 249	38 Pct	26 Pct
250 and over	31 Pct	29 Pct



Blow Knox Co.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Our industry has over-produced and used short-term borrowing to finance absurdly high inventories of finished goods. This has caused distress selling and severe financial losses to many important producers. Realistic sales forecasting in the construction machinery business will help us greatly." **J. E. Carroll, President, American Hoist & Derrick Co., St. Paul, Minn.**

Continued

Construction, continued

"New competitors are constantly entering this field. Most of them have been manufacturing other products and now figure they can add to their volume by making these lines (spreaders for sanding icy highways and streets—and snow plows). Each one tries to get a quick foothold by cutting prices.

Some just quit, others go broke in so doing, but meanwhile they 'cut in' here and there. Some survive and eventually become more ethical." **W. H. Immel, Executive Vice President, Flink Co., Streator, Ill.**

"The past recession has promoted the need for better salesmanship. Also the past recession has promoted more efficiency in management and lower overhead. Therefore 'cost of doing business' should

be less and 'price cutting' should decline." **A. F. Greetinghouse, Sr. Partner, Garbro Manufacturing Co., Los Angeles, Calif.**

"There will be more construction and more funds available for it." **M. Holmgreen, President, Alamo Iron Works, San Antonio, Texas.**

"New products for '59; effects of cost reduction program; new distribution outlets as a result of increased sales efforts."

"Development of new equipment." **E. R. Stadfuss, President, Burch Corporation, Crestline, Ohio.**

"Labor saving." **Max Riebenack, III, President, Industrial Brownhoist Corp., Bay City, Mich.**

"Since coal mining equipment is a substantial segment of our business, increased tonnage requirements would have a substantial effect on our industry. Developments in the use of coal and its products in the chemical field on a large scale would be very important."

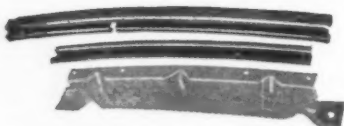
"Control of inflation is greatest problem! The question is, when may we be awake to find this has actually acquired a cancerous hold on our American way of life to the point of destroying it?" **R. L. Aulmann, Vice President, Eagle Iron Works, Des Moines, Iowa.**

"Possible steel strike." **R. E. Henry, Works Manager, Ka Mo Tools, Inc., Cicero, Ill.**

"The big highway program won't help us for 10 years. Reason: states rob maintenance money for construction. Federal not helping on maintenance." **Q. M. Gledhill, Gledhill Road Machinery Co., Galion, Ohio.**

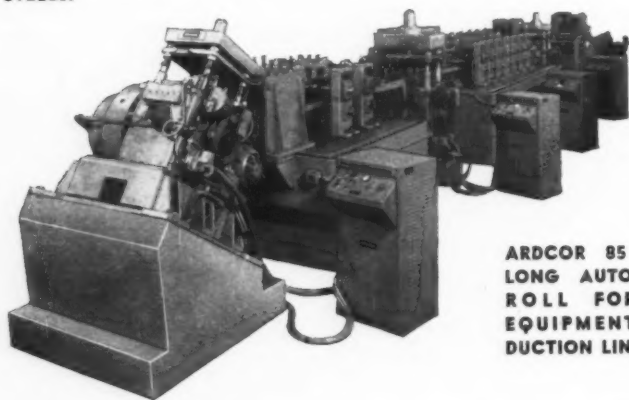
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. . . UP TO 45 SEAT TRACKS PER MINUTE, Roll Formed, Pierced, Coiled and Cutoff on this ARDCOR Completely Automated Production Line.



ARDCOR 85 FOOT LONG AUTOMATED ROLL FORMING EQUIPMENT PRODUCTION LINE.

ARDCOR Roll Forming Equipment, now used by one of America's leading Automotive Manufacturers, for roll forming Upper and Lower Seat Tracks for 1959 model cars.

Starting from the coil box (in the background of the photo above), the stock travels at high speed through a succession of operations including Leveller, First Pre-Notcher, Forming Mill Passes, Second Pre-Notcher, Two-Drive Coiling Fixture, to the Cutoff Press shown in the foreground. Four Pulpit Control Stands are located at the two Pre-Notching Stations, Forming Mill, and Cutoff Press, giving the operators completely automated or emergency control at every station.

Throughout the metal working industry, modern roll forming methods are giving faster production with new and important economies. Let ARDCOR standard or special design Roll Forming Equipment introduce these new and improved production advantages in your plant.

Consult our Engineering Facilities, without obligation . . .



American ROLLER DIE CORP.

29504 Clayton Avenue

Wickliffe, Ohio

DESIGNERS AND MANUFACTURERS: All Sizes and Spindle Diameters of Roll Forming, Milling, Villed and Lath, Seam Tube Mills • Forming Rolls, Tubing and Pipe Rolls • Straightening, Pinch and Roll, Rolls • Cutoff Machinery

Salt bath heat treating helps put you in a better competitive situation!

The Ajax files are full of case history records such as these. Each represents a typical instance where replacement of other heat treating systems with Ajax Salt Baths have meant important cost reductions or greatly improved quality—and usually both:

\$37,000 WAS SAVED in 8-months by an Ohio manufacturer through using an Ajax Electric Salt Bath installation for 4 different cost-cutting operations i.e. carburizing, simultaneous carburizing and brazing; brazing; and hardening.

A 350% PRODUCTION INCREASE in 45% less space with 50% less labor was achieved in carburizing bearing races in a 6-unit Ajax Electric Salt Bath installation.

A 60% COST REDUCTION in case hardening body screws was scored by a single Ajax Salt Bath no larger than your desk but handling 390 lbs. of work per hour.

AN 80% REDUCTION in finish grinding time was obtained by martempering SAE-52100 bearing races in an Ajax installation. Drawn to Rc 62-63, the races showed average out-of-round distortion of only 0.002-0.003".

A 4 TO 5 TIME LIFE INCREASE for rock bits resulted from Ajax Salt Bath hardening which also made possible use of plain carbon rather than costly alloy steel. 480 lbs. of work per hour are handled in a bath only 36" x 11" x 36".

SIMULTANEOUS CARBURIZING AND BRAZING of a complicated motor starting assembly are done in one Ajax furnace with one heating of the work as compared to two heatings previously required.

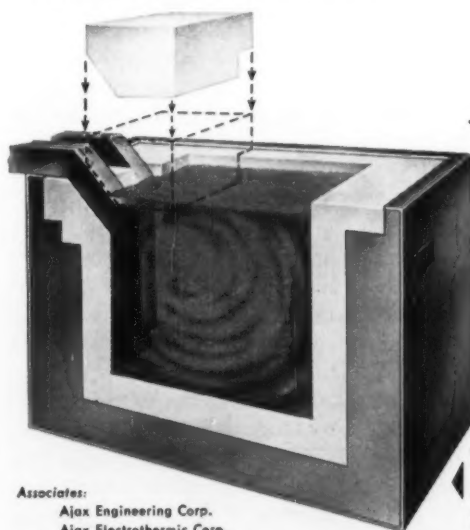
Savings like these are vitally important—and Ajax can help you to realize them to the fullest extent.

The chief product of Ajax is applied heat treating "know how" . . . not merely the largest assortment of salt bath furnace types in the world. When you discuss heat treating matters with Ajax, you get full benefit of unmatched experience not alone in designing and selling furnaces, but in helping you utilize them to best possible advantage.

There is no obligation in having Ajax make a frank appraisal of your heat treating situation.

AJAX ELECTRIC COMPANY

904 Frankford Avenue
Philadelphia 23, Pa.



Associates:
Ajax Engineering Corp.
Ajax Electrothermic Corp.



AJAX

HULTGREN

SALT BATH FURNACES

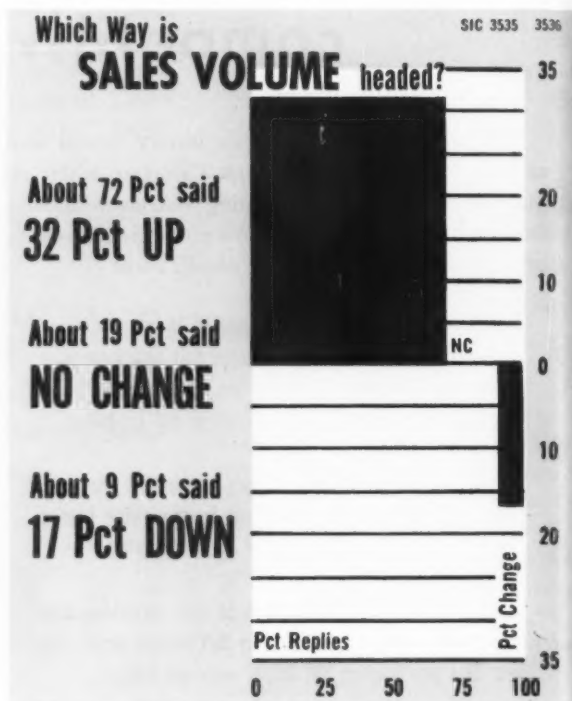
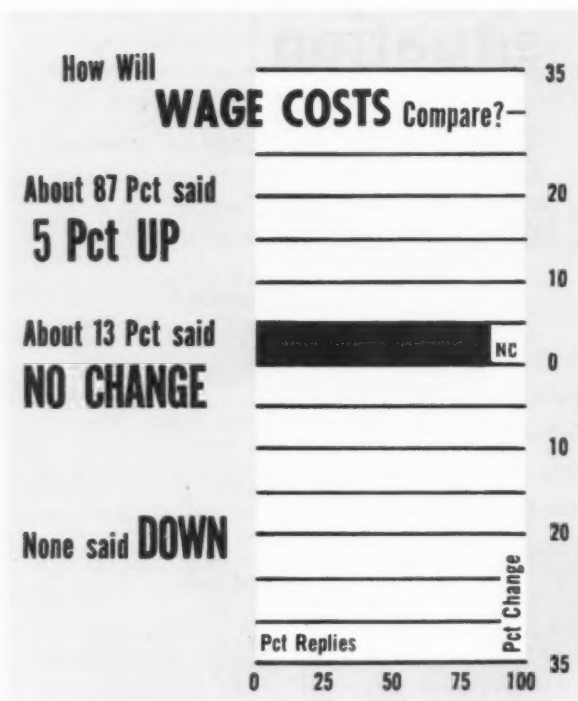
Internally heated.

Electric and gas fired types.

The most efficient heat treating principle for a wide variety of work . . . Pioneered by Ajax in the largest line of furnace types, shapes and sizes for modern production requirements.

PIONEERS IN SALT BATH HEAT TREATING PROGRESS

Upturn Under Way for Material



Executives believe customers have to continue their drive to cut materials handling costs.

It should mean improved sales and profits for makers of conveyors, cranes and hoists.

■ The outlook of makers of conveyors, cranes and hoists has undergone a marked change from a year ago—and all for the better.

From a very pessimistic outlook when surveyed about 1958 prospects, manufacturers in these related fields have shifted to a state of guarded optimism when looking ahead to 1959.

Generally, they believe that the continued drive to lower materials handling costs creates a steady market for their products. And, although no great upsurge in capital spending is indicated this year, the

worst is over in new equipment cut backs.

In contrast to a year ago, today, 42 pct expect better profits, while last year 76 pct predicted lower profits. Last year 50 pct predicted sales declines while this year 72 pct count on improved sales.

Unfortunately, most of the year-ago predictions of declining sales came true. But now manufacturers are looking for a mild upturn. A minority group, however, is still pessimistic.

Significantly, the 72 pct who predict better sales see a substantial improvement of about 32 pct. Only 9 pct forecast a decline in sales with the remainder in the "no change" category.

It's apparently a characteristic of the time that profits are not expected to go up the same rate as

sales. Nor does everyone who predicts a sales increase believe that a profit gain will necessarily follow.

Only 42 pct forecast a profit increase, and that averages out to a 19 pct gain. Of the remainder, 45 pct predict no change in their profits while 13 pct see a decline. Those predicting a drop in profits are unusually pessimistic. They see an average drop of 34 pct. This indicates that special conditions, rather than overall market trends, contribute to unfavorable predictions.

In spite of the improved outlook, backlogs dwindled during the past year. Weighted backlogs at the end of 1958 stood at 85 days, compared with 117 days a year ago.

Manufacturers of these products have reduced their inventories, both raw materials and finished goods.

al Handling Equipment

SIC 3535, SIC 3536

Percent of Replies by Plant Size:

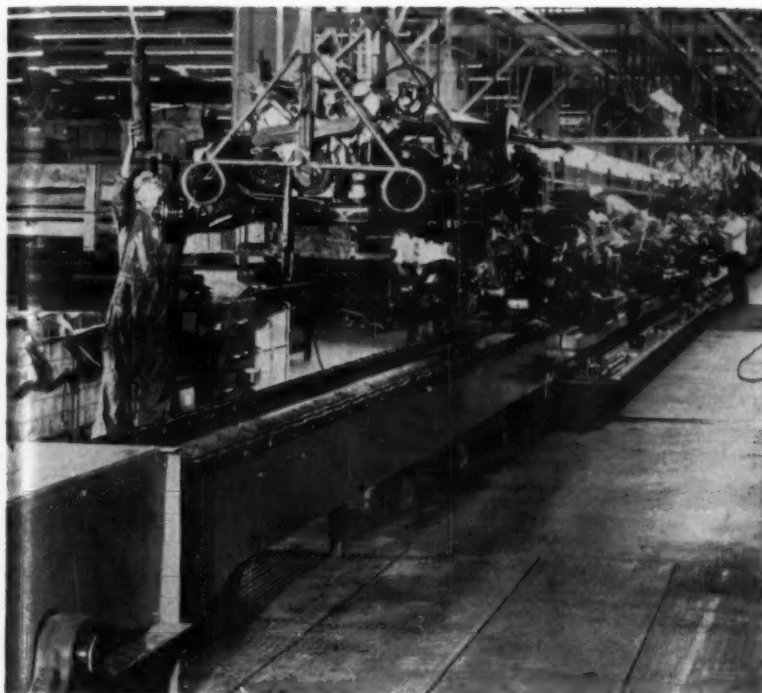
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	42 Pct	25 Pct
100 to 249	34 Pct	36 Pct
250 and over	24 Pct	39 Pct

What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"We are setting up for national distribution which we expect will carry our business. Michigan political and tax climate has killed Michigan business so we have to look beyond for business. We are now shipping 18 conveyors to Warsaw, Poland." **R. G. Wells, President,** Dearborn Fabricating & Eng., Detroit 23, Mich.

Continued



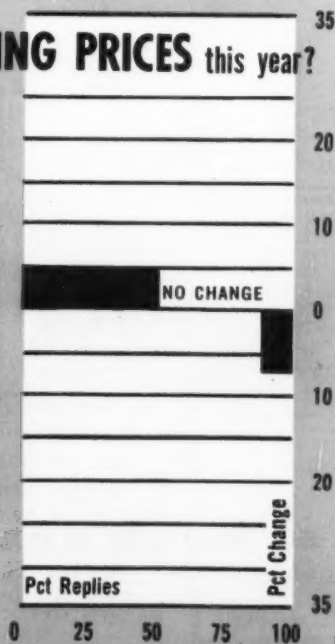
Link Belt Co.

What About Your SELLING PRICES this year?

About 51 Pct said
5 Pct UP

About 39 Pct said
NO CHANGE

About 10 Pct said
7 Pct DOWN

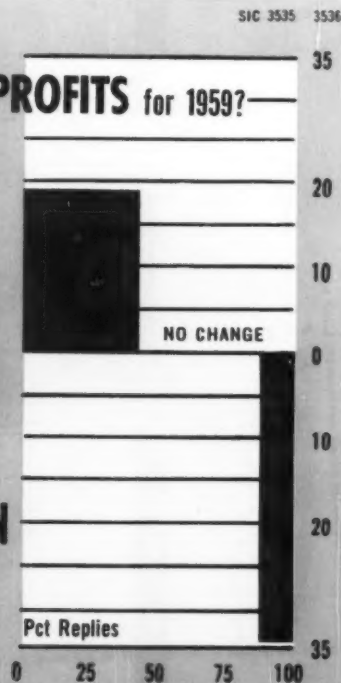


Any Change in PROFITS for 1959?

About 42 Pct said
19 Pct UP

About 45 Pct said
NO CHANGE

About 13 Pct said
34 Pct DOWN

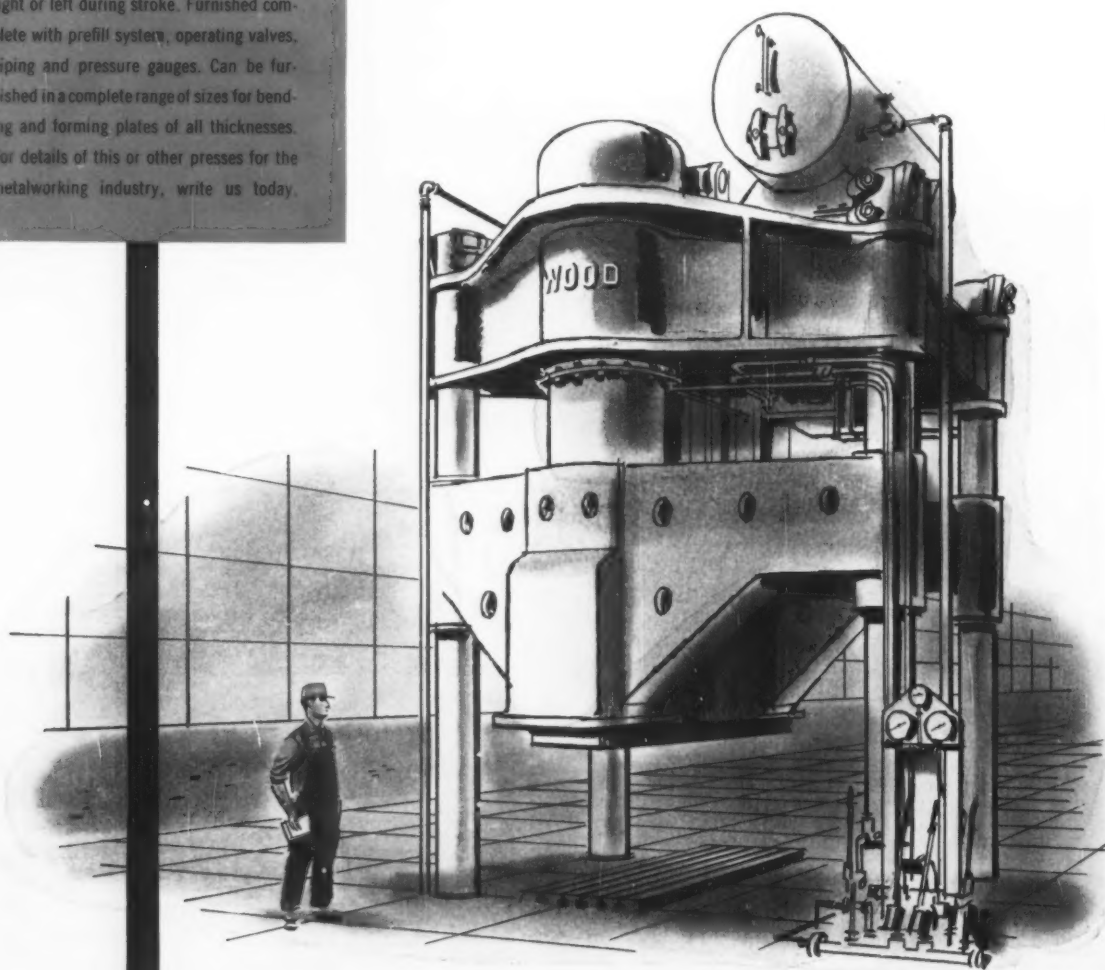




1500-ton Heavy-Duty Forming Press for bending and forming operations on heavy steel plate. Moving platen can be tilted right or left during stroke. Furnished complete with prefill system, operating valves, piping and pressure gauges. Can be furnished in a complete range of sizes for bending and forming plates of all thicknesses. For details of this or other presses for the metalworking industry, write us today.

You'll like what it does to production

It's just plain common sense—when your down-time decreases your production is bound to increase. Down-time can't be eliminated, but R. D. Wood Presses hold it to a minimum. The sound design, choice materials and careful craftsmanship that go into a Wood Press produce a superior product—a dependable, smooth-working press that can't help but increase production records. Write for our catalog and engineering information—no obligation.



R. D. WOOD COMPANY

PUBLIC LEDGER BUILDING • PHILADELPHIA 5, PENNSYLVANIA

"Improved distribution through distributor training and assistance. Complete review of all products to incorporate more desirable sales features, use materials better and effect better utilization of labor." **George Arneson, Director of Marketing, Borg-Warner Industrial Cranes, Chicago 8, Ill.**

"Comparatively slow rise in capital expenditures."

"New products and techniques are responsible for the largest backlog we have ever had except in war economics." **J. Dunbar, President, Geneva, Ill.**

"Increased automation." **R. S. Logan, Chairman of the Board, Logan Co., Louisville 6, Ky.**

"Marketing problems — Labor costs are up and local competition not knowing just where their costs are, under bid jobs 15 to 35 pct below us and others who have spent years working on cost systems."

"The development of sufficient confidence in those with enough capital to spend for contemplated improvements and expansion. Many quotes have been in prospective customers' hands for a long time but little has been advanced to the final buying stages."

"New highway cement specifications requiring cool cement delivered to the job sites."

"No one development or problem holds any key for us." **G. W. Way, President, Hughes-Keenan Corp., Delaware, Ohio.**

"Industry will concentrate to reduce production costs in the field of their materials handling problems. This will stimulate more utilization of industrial trucks—fork lift and crane trucks—and we expect to benefit from this impact." **M. M. Botnick, General Sales Manager, Silent Hoist & Crane Co., Brooklyn 20, N. Y.**

NEW OAKITE CLEANERS GIVE YOU MORE FOR YOUR PAINT-PREPARATION DOLLAR

Here are 4 ways to end pre-paint metal-cleaning troubles

Does your trouble chart show that you need better cleaners, strippers or surface conditioners?

- ☐ Cleaning solution foams excessively in spray washing machine. See 1 below.
- ☐ Streaky discolorations or powdery residues cling to surface of steel parts being stripped for repainting. See 2.
- ☐ Zinc phosphating process too difficult to control... Iron phosphating process doesn't show good results in salt spray tests. See 3.
- ☐ Too many operations—cleaning, pickling, neutralizing, etc.—are needed to prepare steel that does not require phosphating before painting. See 4.

Here are brief descriptions of new Oakite materials designed to end these particular troubles:

- 1 For a spray washing solution that does not foam at high pressure, try Oakite Composition No. 161. Does not attack aluminum.
- 2 For stripping pigmented paint, phosphate coatings and undercoat rust in one operation, try Oakite Rustripper.
- 3 For a zinc phosphating process that is truly easy to control, try new Oakite CrysCoat SW... For salt spray results far beyond the capacity of ordinary phosphating processes, try new Oakite CrysCoat No. 89.
- 4 For one-operation removal of rust, heat scale, welding residues and light soil together with good preparation for painting, try Oakite Compound No. 131. Inhibited against attack on steel.

FREE Check the coupon and we will send you free booklets or bulletins with full information on new Oakite cleaners.

OAKITE

OAKITE PRODUCTS, INC.
30H Rector Street, New York 6, N. Y.

Send me free booklets or bulletins giving complete information on the new Oakite materials checked below:

- ☐ Oakite Composition No. 161
- ☐ Oakite Rustripper
- ☐ Oakite CrysCoat SW
- ☐ Oakite CrysCoat No. 89
- ☐ Oakite Compound No. 131

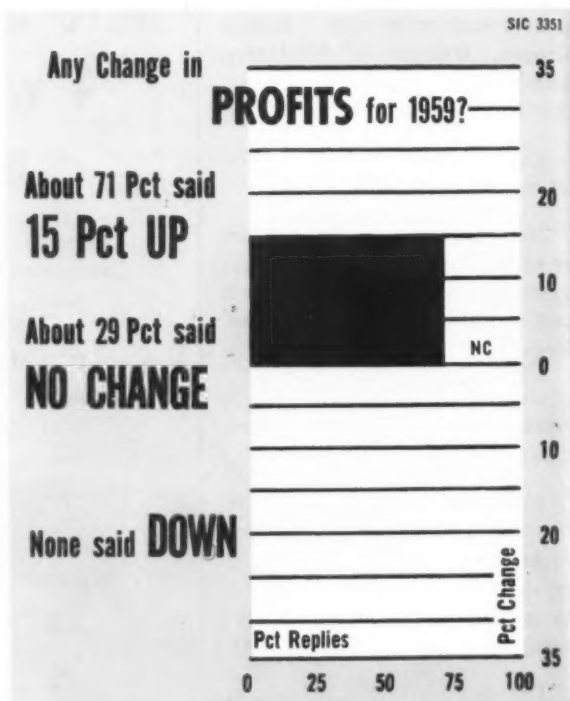
NAME _____

COMPANY _____

ADDRESS _____



Brass Mills Hopeful, But Worry



The past year was none too good for brass mills, but a good fourth quarter upturn helps.

In spite of worry over low-priced imports, the industry sees a 16 pct improvement in sales.

Encouraged by a brisk pickup in business in the last quarter of 1958, brass mill executives are confident of a better sales and profit picture this year.

As one of the metalworking industries that believes business can't get worse than its 1958 bottom, copper and brass rolling mills are 100 pct on the record predicting increased sales volumes in 1959.

This doesn't reflect any great feeling of tremendous optimism. The industry faces many problems and it will take a significant improvement in sales to result in a really good

year for many of the producers.

Reflecting this situation are the comparatively fewer predictions on better profit outlook, 71 pct, compared with the 100 pct predicting better sales.

The biggest problem confronting the industry is foreign competition, which many believe will be intensified during the year. This industry is one of the strongest advocates of protective tariffs.

Another factor that figures importantly in this industry is the price of copper. Stability of the copper price would be a big help.

Reflecting the improved fourth quarter business, copper and brass rolling mills have seen their backlogs lengthen out to 30 days, compared with 25 a year ago. However, the 20 pct improvement from a year ago does not reflect the recent market improvement. Backlogs were on

the way down a year ago and during the year went substantially below the level of a year ago.

Backlogs are weighted on the basis of employment of the respondent companies.

On the outlook for '59, there are no indications of a depressed market this year. The 71 pct predicting improved profits were backed up by 29 pct indicating no change in their profit picture. None indicated a poorer year ahead.

The general belief that metalworking wages will go up is reflected in the brass mills, where 93 pct predict a 4 pct boost in wage costs.

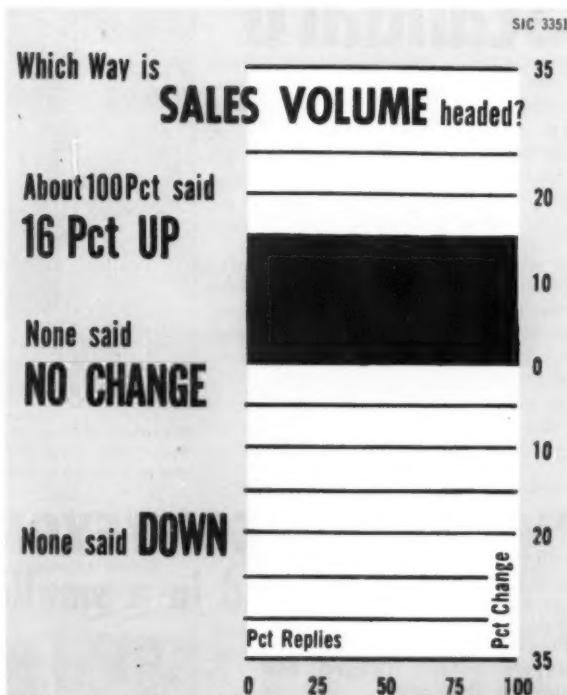
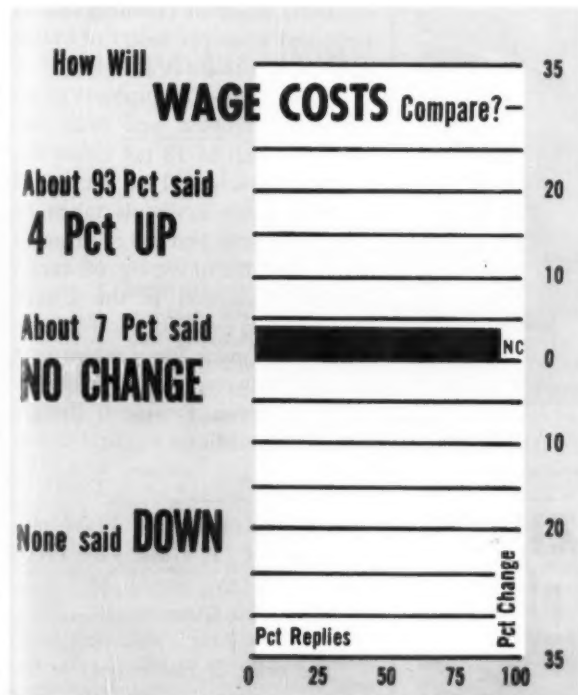
It's believed 69 pct report that prices will go up; 31 pct believe there will be no change. This indicates a feeling of being caught in a price squeeze. In spite of low-priced competition from foreign sources, none forecast lower prices.

About Imports

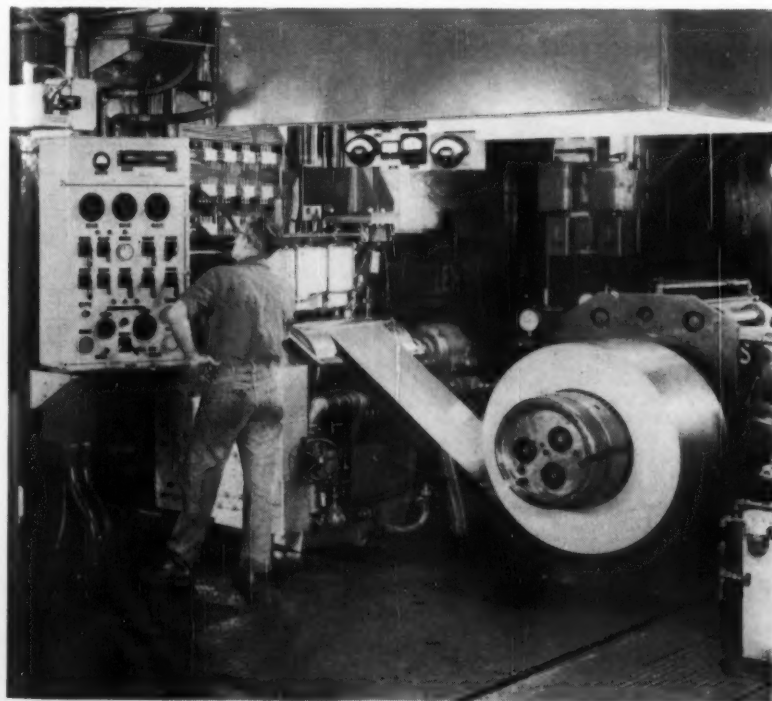
SIC 3351

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 249	36 Pct	50 Pct
250 to 999	44 Pct	35 Pct
1000 and over	20 Pct	15 Pct



American Brass Co.



**What
Industry Executives
say:**

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"We have an unusual price situation on several commodities in the industry—if and when they return to normal it will definitely affect our profit and sales picture." **A. C. Dap-pert, Vice President, Mueller Brass Co., Port Huron, Mich.**

"Cheap foreign imports." **H. B. Smith, President, National Copper & Smelting, Cleveland 6, Ohio.**

Continued

Ask Standard

*how to
cut costs
with
conveyors*



Standard limit-switch-controlled Automatic Reciprocator is one of two used to form 200-ft. overhead detour of dehumidifier assembly line.

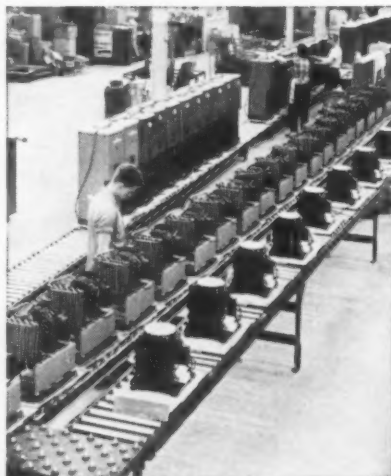
"COMPLETE CONVEYORIZING" ...what it did in a smaller plant

Products at Ebco stay on conveyors until packaged and sent to shipping.

Ebco Manufacturing Company — employing 275 people to produce water coolers, beverage dispensers and dehumidifiers — has realized substantial savings by completely conveyORIZING their operations. Ebco engineers planned for an orderly conveyor system when developing plant layout and building design; consequently conveyor system costs were kept "low" and resulting efficiency is "excellent."

Similarly, it will pay you to take another close look at your present conveyor system. Standard specialists will be pleased to help you make evaluations... recommend the proper equipment and its application to meet your specific needs.

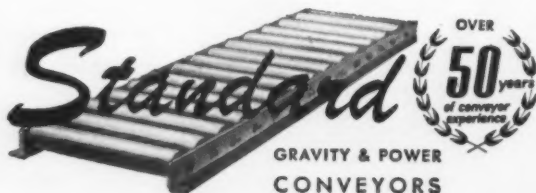
STANDARD CONVEYOR COMPANY, North St. Paul 9, Minnesota. Sales and Service in Principal Cities.



Gravity roller conveyors like this, used for Ebco's assembly lines, are inexpensive, easy to set up, and economical to maintain.



For details on Standard Conveyors of all types, contact the Standard representative listed in your classified phone book or write direct. Ask for Bulletin M-1.



Copper and Brass, continued

"Technical—We believe the development of continuous-type processes, such as the Hazelett continuous casting process and the roll compacting of copper powder, will significantly affect the planning of both large and small producers of aluminum and brass sheet and strip.

"Marketing—The problem of increasing aluminum and brass imports as much as 18 pct below domestic products will be intensified in 1959 unless action is taken by industry, unions and the government to prevent the dumping of excess foreign production in the United States and to establish tariff protection against much lower wages paid to workers by foreign competitors."

P. M. Welpton, President, Bridgeport Rolling Mills Co., Bridgeport, Conn.

"Imports of foreign brass mill products." **C. P. Goss**, Vice President, Mills Div., Scovill Mfg. Co., Waterbury 20, Conn.

"The price of raw copper is the most important factor. If held steady it will provide stimulus for a better demand. Any substantial upward spiral will be self-defeating."

"Unstable prices."



"As soon as the b-o-s-s goes, we'll go out for a s-m-o-k-e."

Special Reports

On Finishing Non-Ferrous Metals

NUMBER II—Paint Base, Corrosion-Resistant Finishing with Iridite

WHAT IS IRIDITE?

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a non-porous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

Chromate conversion coatings are well known and accepted throughout industry as an economical means of providing corrosion protection, a good paint base and decorative finishes for non-ferrous metals. However, continued developments have been so rapid and widespread that many manufacturers may not be completely aware of the breadth of application of this type of finish. Hence, this digest of current information; to bring you up to date on the many ways in which you can obtain proper surface preparation for painting and increase product durability with a single multi-purpose chemical pretreatment. Report I on decorative, corrosion-resistant finishes and Report III on chemically polished, corrosion-resistant finishes are available on request.

First, it is an accepted fact that metal surfaces should be prepared before painting to make possible an efficient paint system. Naturally, this preparation should provide for good initial paint adhesion. Chemical treatments have proved extremely effective in this respect, particularly those of a neutral or preferably acid nature. Further, to be most efficient, chemical treatments should provide a non-porous barrier to maintain adhesion by sealing the metal from the paint and moisture. They should also provide a self-healing film which prevents lateral corrosion in the event that bare metal is exposed through scratching.

The Iridite chromate conversion coatings meet all these requirements. Iridite

is a chemical conversion treatment for surface preparation. It provides initial paint bonding by molecular adhesion. It is acid in nature and produces a film that is gel-like and non-porous in structure. Thus, the Iridite film effectively seals the metal from the paint and from moisture penetration. Because the film contains certain relatively soluble constituents, it will protect areas scratched through to bare metal and prevent lateral corrosion. This is accomplished by a gradual leaching of these constituents into the damaged area.

Further, because of its gel-like, non-crystalline nature, the Iridite film will not affect the appearance or texture of the paint film, nor will it dust or powder to mar the painted surface. Because the film is non-porous, paint coverage is increased, thus substantial savings in paint costs will be realized. In addition, treated parts may be stored for long periods of time prior to painting without the risk of entrapped moisture causing blistering when painting.

Iridite chromate conversion coatings are widely used with equal ease and success under both baked and air-dried paint systems. While the actual adherence properties of the Iridite film do not increase appreciably with its thickness, corrosion protection does. The protection of the Iridite film is proportionate to its thickness and should be taken into consideration when selecting the Iridite to meet your needs. However, it is sometimes necessary to sacrifice maximum corrosion protection for appearance when a finished

part is to be only partially painted. For example, it may be desirable to use a thin, clear, bright Iridite film if the unpainted areas must present a chrome-like appearance. A typical case is that of instrument housings on which the exterior is painted and the inside left unpainted.

On the other hand, if all surfaces of the product are to be painted and maximum corrosion protection is required, the heavier and most protective Iridite films should be used. For example, all surfaces of zinc die cast fruit juicers are finished with a highly protective Iridite film prior to painting to provide maximum resistance to the corrosive action of fruit juices.

Iridite finishes are now available for all commercial forms of the more commonly used non-ferrous metals, including zinc, cadmium, aluminum, magnesium, silver, copper, brass and bronze. In addition to providing an excellent base for paint, the Iridite films also have high decorative value when used as final finishes in themselves.

These films can produce a wide variety of pleasing appearances including clear bright, iridescent yellow, bronze, olive drab and brown. In addition, many films can be modified by bleaching or by dyeing. Among the dye colors available are various shades of red, yellow, green, blue or black.

In planning or designing, you should consider the many other characteristics of Iridite finishes which may enter into the specific problem. In addition to their functions as protective and decorative finishes, and as bases for organic finishes and bonding compounds, Iridites have low electrical resistance. Some can be soldered and welded. The film does not affect the dimensional stability of close tolerance parts.

Iridites are widely approved under both Armed Services and industrial specifications because of performance, low cost and savings of materials and equipment.

You can see then, that with the many factors to be considered, selection of the Iridite best suited to your product requires the services of a specialist. That's why Allied maintains a staff of competent Field Engineers—to help you select the Iridite to make your installation most efficient in improving the quality of your product. You'll find your Allied Field Engineer listed under "Plating Supplies" in your classified telephone book. Or, write direct and tell us your problem. Complete literature and data, as well as sample part processing, is available. Allied Research Products, Inc., 4004-06 East Monument Street, Baltimore 5, Maryland.

Price Policies Concern Makers

Unstable prices in the past have characterized the industry. Many are now trying to avoid a repetition.

It adds up to a better year, but a competitive one.

■ Pricing policies continue to hang over the heads of the makers of electric motors.

The industry has been intensely competitive in the past, and this year will be no exception. Price cutting and unstable price structures have hurt the industry, motor makers believe.

As a result, while nearly all manufacturers in the electric motor field forecast improved sales, not as many are as sure of improved profits. With material and wage costs probably due to go up, many

are concerned about a cost-price squeeze.

Many of the manufacturers have new products that they are counting on bringing in new customers by showing cost and performance advantages.

In spite of the somewhat gloomy price situation, the outlook this year is considerably better than a year ago. At that time, only 46 pct could forecast a sales upturn, compared with 82 pct this year. One respondent forecasts lower prices, but this does not affect percentages sufficiently to show on the chart. The remainder see no change.

As indicated, the profit picture is a little tougher. But in spite of concern, 62 pct believe the profit picture will improve, with about a 22 pct gain in earnings. Only 11 pct see a downtrend in profits. The

remaining 27 pct believe profits will be relatively unchanged.

Backlogs for electric motors have lengthened out 11 pct during the past year and stand at 71 days compared with 64 days a year ago. Generally speaking, inventories of both materials and finished products are under what they were a year ago. Backlog and inventory material is weighted according to employment of respondent companies.

In view of the extreme attention electric motor producers are paying to pricing policies, it's not surprising that a majority, 56 pct, believe that the price line will be held. A venturesome 33 pct say prices will go up, while 13 pct believe prices will decline.

It adds up to a better year for the industry, but still one of the most competitive.

Westinghouse Electric Corp.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Competition is keen at the present time. The greatest problem will be how to maintain the prices of our products at a level which will bring in sufficient business to keep a factory going." **C. D. Bodine, President, Bodine Electric Co., Chicago 12, Ill.**

"I am of the opinion that unstable

Continued

Of Electric Motors

SIC 3621

Percent of Replies by Plant Size:

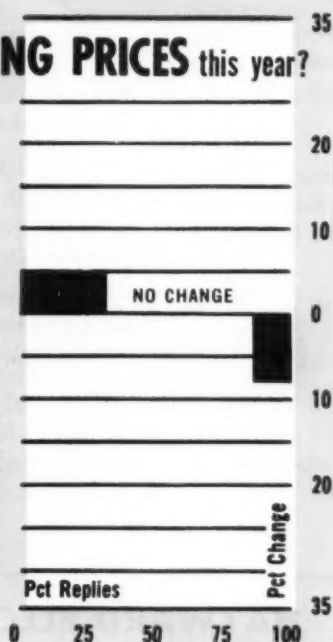
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	24 Pct	20 Pct
100 to 499	48 Pct	47 Pct
500 and over	28 Pct	33 Pct

What About Your
SELLING PRICES this year?

About 31 Pct said
5 Pct UP

About 56 Pct said
NO CHANGE

About 13 Pct said
8 Pct DOWN

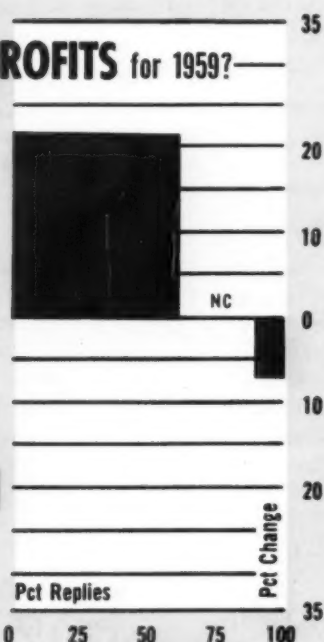


Any Change in
PROFITS for 1959?

About 62 Pct said
22 Pct UP

About 27 Pct said
NO CHANGE

About 11 Pct said
7 Pct DOWN

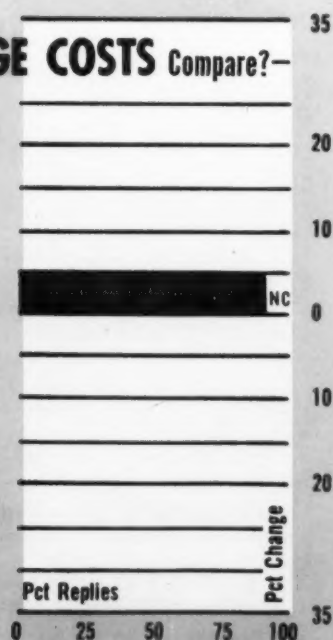


How Will
WAGE COSTS Compare?—

About 93 Pct said
5 Pct UP

About 7 Pct said
NO CHANGE

None said **DOWN**



Which Way is
SALES VOLUME headed?

About 82 Pct said
20 Pct UP

About 18 Pct said
NO CHANGE

None said **DOWN**



prices will continue in 1959 as they have in the past. Our industry goes up and down. Pricing is very unhealthy. It creates lack of confidence on the part of our customers and I'm sure they make efforts to find other ways and means to satisfy their needs."

"Maintaining competitive prices in order to sell a satisfactory volume and still produce satisfactory profits." **R. H. Morse, Jr., President**, Fairbanks Morse & Co., Inc., Chicago 5, Ill.

"Electric motor industry must face a cost-price-profit squeeze in 1959. Excess production capacity has resulted in ruinous competition in some cases and all are bound to suffer sooner or later." **J. W. Tweedy, President and General Manager**, Redmond Co., Inc., Owosso, Mich.

"Missiles and automation."

"Imports of European products will increase."

"Developing industrial market for ionizing radiation." **N. Tufts, Jr.**, Sales Division, High Voltage Engineering Corp., Cambridge 38, Mass.

"Customer acceptance of many radical new developments involving use of technological developments." **G. J. Berry, President**, Electric Products Co., Cleveland 12, Ohio.

"Labor."

"Expect more competition price wise." **H. R. Potter, General Manager**, Reeves Hoffman Corp., Carlisle, Pa.

"Outlook is for more competition and accelerated new product development." **R. A. Niekamp, President**, Standard Dayton Corp., Dayton 1, Ohio.

"As demand for motors improves there should be more firmness in


price. Since there will be increases in material and labor costs, prices are going to rise. The rise, however, will not be very great. On industrial motors the profit margin will probably be less in 1959 than in 1958. Customers also have the protection of 6 months on orders placed now at present prices before increases actually take effect."

"Continuation of highly competitive situation." **J. H. Devon, President**, Wagner Electric Corp., St. Louis 14, Mo.

"Prices have been cut beyond levels where profits are possible. Prices should stabilize which would mean an increase."

"New Products." **C. H. Cummings, General Manager**, Haydon Mfg. Co., Inc., Torrington, Conn.

"Chemical changes in insulation materials." **W. A. Everson, President**, Everson Electric Co., Allentown, Pa.



POWER!

FEIN

Portable Power Hack Saw

Electrically or Pneumatically driven

The saw blade of high speed steel moves at a speed of 480 strokes per minute with a 2½" thrust. Easily cuts any profile metal and steel or cast iron pipe up to 6" diameter. Driven by 250 Watt Universal Motor, 200 Watt 3 Phase motor or a 0.5 HP air turbine.

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Precision-made power tools of unsurpassed performance
611 BROADWAY, NEW YORK 12, N. Y.

HAYWARD ELECTRIC

MOTOR BUCKETS

**Work Longer,
Work Faster,
Wear Less!**

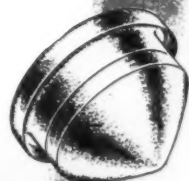
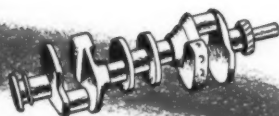


Hook onto any electric over-head crane...need no latches, hand lines, ropes or limit switches...can't discharge accidentally while being traversed...operates without need of circuit breakers...motor enclosed against dust, soot and weather...steel and bronze construction...can operate in pits or high-sided cars...plus many other cost-cutting design features!

Write for illustrated bulletin giving complete details including sizes, weights and dimensions.

THE HAYWARD COMPANY
50 CHURCH ST., DEPT 1, NEW YORK 7, N. Y.
Builders of Better Buckets Since 1888

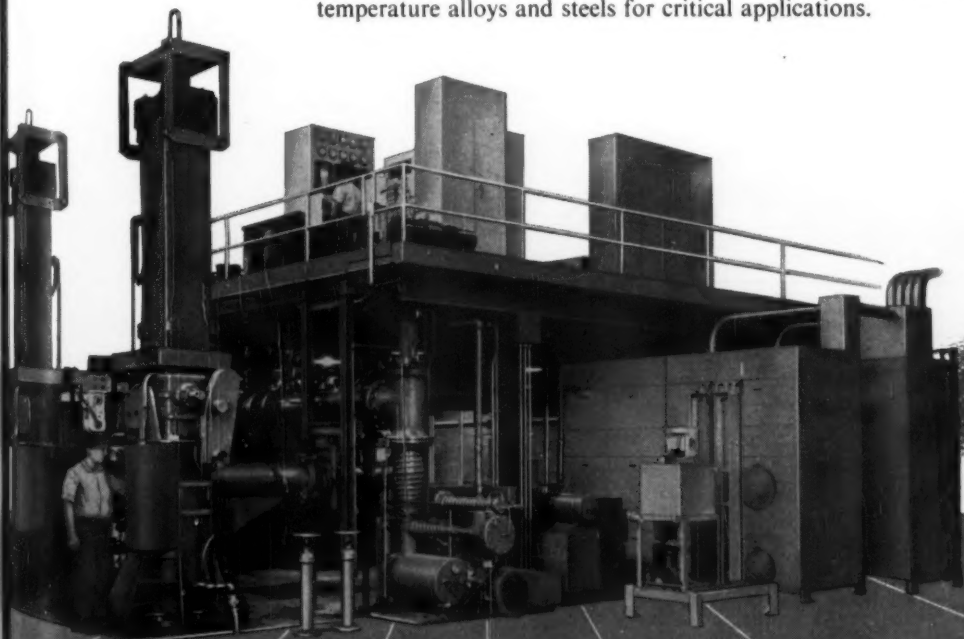
SUPER ALLOY STEEL BY *MIDVAC* **...A NEW STANDARD IN QUALITY**



Steels to meet the exacting specifications of the aircraft, missile and bearings industries are being produced at Midvale-Heppenstall by the MIDVAC Process of consumable electrode melting.

Super alloy steels with increased tensile and impact . . . improved stress rupture strength at elevated temperatures . . . longer fatigue life. Midvac Steels are made for jet turbine and afterburner components and critical parts where strength is needed at temperatures above 1000°F. Steels for landing gear parts, retainer rings, compressor rotor blades. Steels for missile components such as combustion chambers, tail cone assemblies, nose cone or structural members.

Midvac Steels are offered in ingots, billets, and forgings of high temperature alloys and steels for critical applications.



MIDVALE-HEPPENSTALL CO.

Nicetown, Philadelphia 40, Pa.

Subsidiary of HEPPENSTALL COMPANY, Pittsburgh, Pa.



Outlook Mixed For Controls

Although most executives in these fields see better profits this year, it's not unanimous.

A lot depends on the rate of capital spending and the direction of defense plans.

■ The makers of controls and switchgear apparatus are watching closely two major developments: Expenditures for new plants and equipment and the direction of military spending.

Since both of these are on the uncertain side at the moment, general optimism about 1959 is tempered by many qualifications and some minority opinion of pessimism.

But overall, manufacturers in these related fields see a continuing area of expansion, although the field is also becoming more competitive in markets and prices, and some

mergers are always in the wind.

In spite of the current lag in capital spending, the direction to more automation (and a demand for more controls that can do more things) is not likely to change.

And defense spending, with more and more emphasis on electronics, is not likely to backslide in the near future.

Furthermore, new developments that will give greater results and cost savings will keep this relatively new industry on the upgrade. Interest in semi-conductors is mounting.

With these things in mind, 76 pct of the executives responding predict a gain of sales volume averaging about a 15 pct improvement. Only 7 pct see a downtrend in sales and 17 pct indicate they see little significant change in the sales pattern this year.

There are wide difference on the profit outlook. Those who do fore-

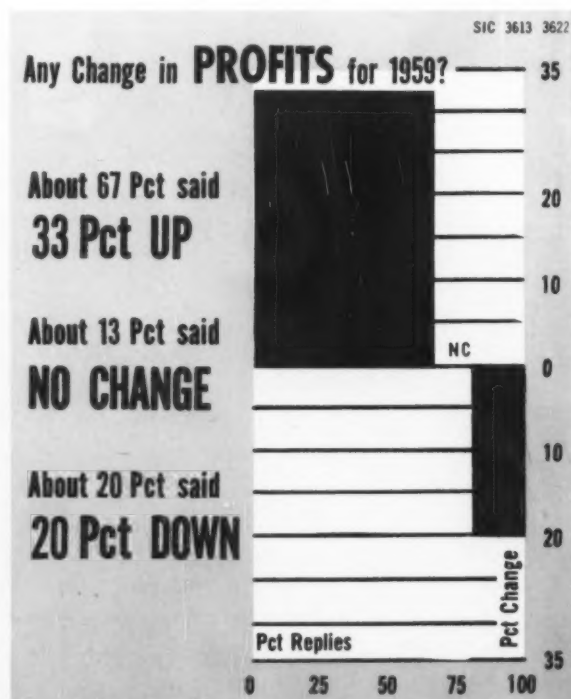
cast profits, some 67 pct, believe their profits will go up 33 pct. But the 20 pct that believe profits will be reduced think the level of profit reduction will be about 20 pct.

Apparently this industry does not have the unanimity of attitude that prevails in some others.

Like virtually every industry in the broad range of metalworking, executives in the controls and switchgear apparatus fields are reconciled to wage increases. The 94 pct believing wages are to go up figure it at a 5 pct gain

Looking back over the past year, manufacturers of these products saw their backlogs shaved from 129 days to 108, as capital improvements were cut throughout industry and the defense spending swung away from aircraft to missiles.

Backlog data is weighted on the basis of employment of the respondent companies.



Is And Switchgear



Lukens Steel Co.

SIC 3613, SIC 3622

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	27 Pct	33 Pct
100 to 499	55 Pct	43 Pct
500 and over	18 Pct	24 Pct

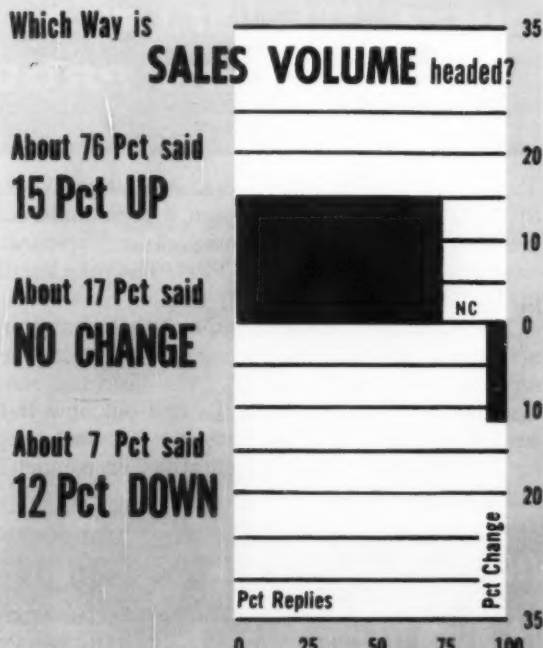
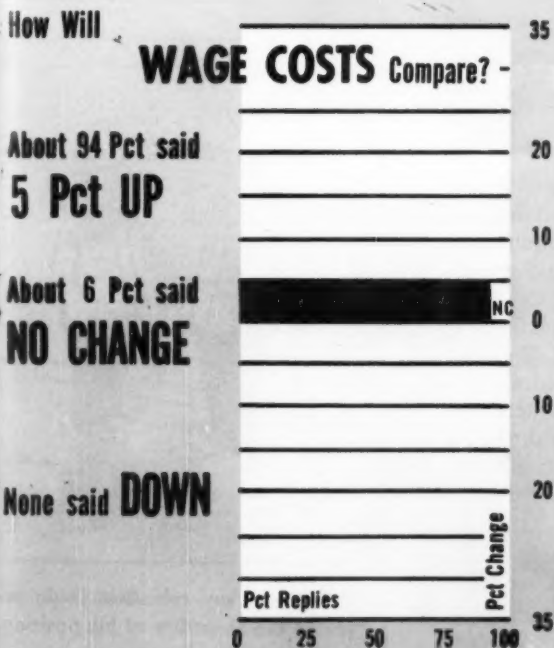
What Industry Executives say:

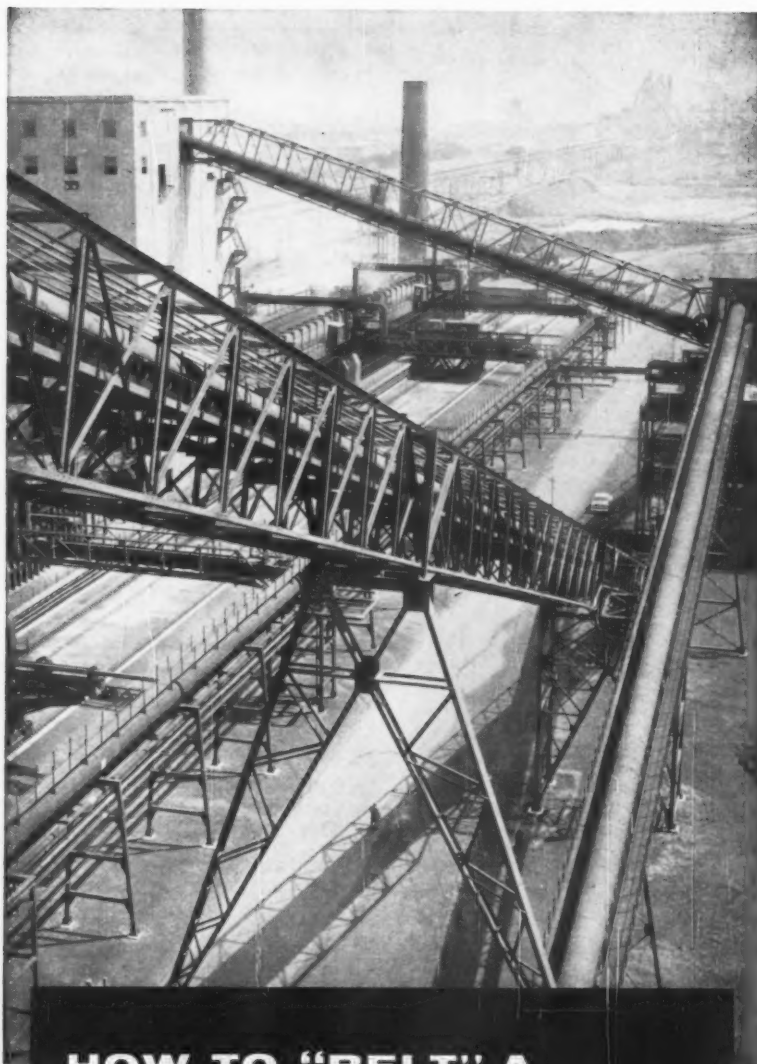
Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Inflationary effect of increased government spending. High taxes. Irresponsible wage negotiations by Labor and (big) management." **T. M. Blake, President, Littelfus Inc., Des Plaines, Ill.**

"Our business is heavily influenced by the plant and equipment expenditures and military aircraft

Continued





HOW TO "BELT" A PRODUCTION PROBLEM

To handle coking coal and coke at its Fairless Works, United States Steel had Hewitt-Robins design a bulk materials handling and processing system. Coal conveyors and preparatory equipment have a rated capacity of 700 TPH. The coke handling and screening unit has a capacity of 200 TPH.

The entire installation, including 18 belt conveyors, 2 belt feeders, a belt and bucket elevator, car puller, grizzly crusher, 2 Gyrex screens, and other machinery, was designed, manufactured and installed by Hewitt-Robins. To find out how H-R products and services can help you, consult your classified telephone directory for the nearest H-R representative, or contact Hewitt-Robins, Stamford, Connecticut.



HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

Controls and Switchgear

and electronic procurement. Our 1959 business level will operate under the influence of these industries."

"Electrical switchgear prices in 1958 have been going as low as 50 pct of normal 'book' price. Until prices recover, regardless of volume, there can't be any true 'recovery' in our field." **W. B. Mann, President, Wolfe & Mann Mfg. Co., Baltimore 11, Md.**

"Electrical O.E.M. Equipment." **K. L. Considine, Vice President, Durakool Inc., Elkhart, Ind.**

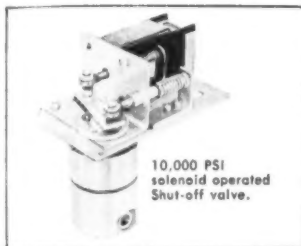
"Terrifically low prices in our field at present. Do not see any improvement yet. Large competitors quoting below our cost." **F. G. Faile, President, Leonard Electric Mfg. Co., Cleveland 14, Ohio.**

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., The IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.



"Just as my relentless logic revealed the absurdity of his position, he fired me."

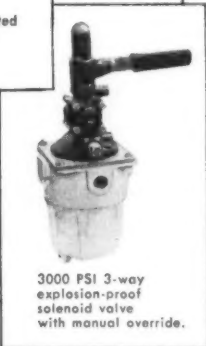
YOUR SPECIAL VALVE MAY ALREADY BE IN PRODUCTION



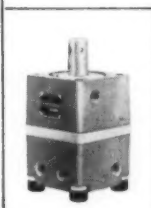
10,000 PSI
solenoid operated
Shut-off valve.



250 PSI 4-way
spring centered
miniature manual
non inter-flow
valve.



3000 PSI 3-way
explosion-proof
solenoid valve
with manual override.



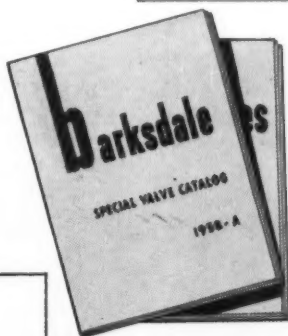
3000 PSI Dual 3-way,
3-position manual
non inter-flow valve.



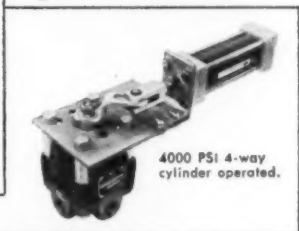
3000 PSI inline
manual shut-off valve.



3000 PSI 4-way
non inter-flow
manual valve
built to military
specifications.



1500 PSI 4-way
spring centered
manual valve with
built in
cylinder relief and
pressure relief valves.



4000 PSI 4-way
cylinder operated.



1500 PSI 4-way
spring centered
manual valve with
built in cylinder
relief valve.



1500 PSI manifold mounted
manual valves on a sub base with
built in check and relief valves.

The Barksdale valves shown on this page represent some of the over 1000 typical examples of modifications developed for the special requirements of original equipment manufacturers.

We are interested in "Specials" and can produce them economically, because the "Shear-Seal" design is exceptionally adaptable.

If you have a special valve requirement, call your Barksdale representative and ask to see the scores of existing modifications in Special Valve Catalog SV-158 and Remote Control Catalog RV-958, or write and outline your special requirements to:



TO FIND THE BARKSDALE REPRESENTATIVE IN YOUR AREA LOOK UNDER "VALVES" IN THE CLASSIFIED SECTION OF THE FOLLOWING PHONE BOOKS:

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Arizona, Phoenix	Minnesota, Minneapolis
California, Los Angeles	St. Paul
Oakland	Missouri, St. Louis
San Diego	Kansas City
San Francisco	New Jersey, Jersey City
San Mateo	New York, Buffalo
Connecticut, Bridgeport	Manhattan
Hartford	Syracuse
Stamford	North Carolina, Charlotte
Dist. of Columbia, Washington	Ohio, Cincinnati
Illinois, Chicago	Cleveland
Rockford	Oklahoma, Tulsa
Rock Island	Oregon, Portland
Indiana, Indianapolis	Pennsylvania, Philadelphia
Iowa, Davenport	Pittsburgh
Kansas, Wichita	Tennessee, Memphis
Kentucky, Louisville	Texas, Amarillo
Louisiana, New Orleans	El Paso
Maryland, Baltimore	Houston
Massachusetts, Boston	Washington, Seattle
	Wisconsin, Milwaukee

Fasteners Pick Up With Better

Fastener makers know their customers' inventories are at rock bottom.

A good year for them means an even better demand for fasteners. Imports still hurt.

■ With hopeful eyes on the possible sales gains of their own best customers, fastener makers are confident of a much better year than in 1958.

There are some complaints: Tough foreign competition and drying up of some markets such as aircraft are some of the most significant.

Of all respondents to the survey, only one pessimist took the position that sales volume will be down this year. (Since the single dissent did not alter percentages, it is not reflected in the chart.)

Looking for an upturn (averaging out to about a 26 pct hoped-for improvement) are 89 pct of the fastener executives. No change was predicted by 11 pct.

Some fastener makers are actually worried about keeping up with demand early this year. They believe that a real production schedule by the auto industry, coupled with a need on the part of most customers to fill depleted inventories, may force overtime operations.

In fact, customer inventories are believed to be low enough that improved business will result from mere rebuilding. A good year for the auto industry, appliances, and other major markets can result in a real good year for fastener makers.

The outlook is significantly better than it was a year ago. At that time, only 18 pct could see better

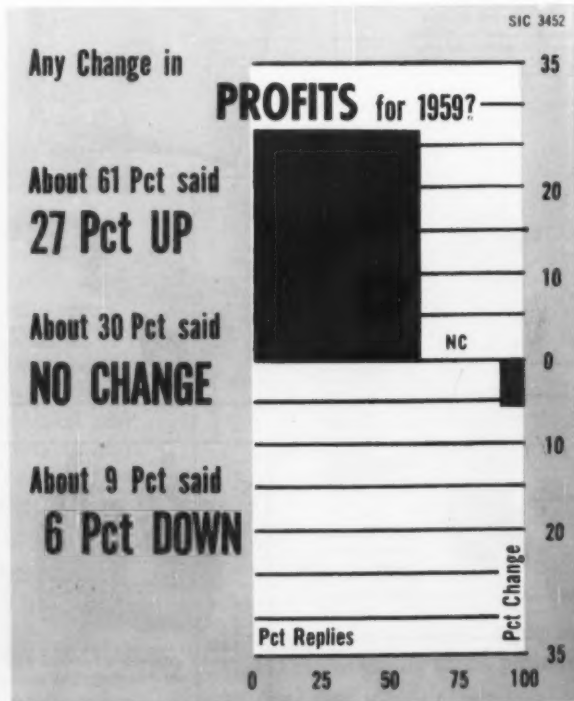
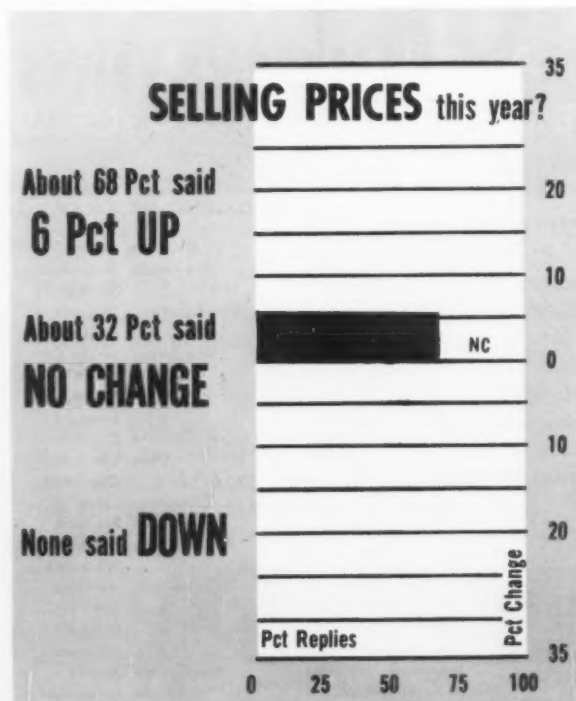
sales volume, compared with the 89 pct today.

Probably because of inevitable wage increases and other increases in production costs, fastener executives are somewhat less optimistic about profits. It's indicated that 61 pct believe profits will climb; 30 pct forecast no change; a mere 9 pct see a downtrend in profits.

Both backlog and inventory situations are little changed among the fastener plants. Backlogs, weighted on employment of responding companies, have lengthened out a trifle.

Inventories, also similarly weighted, show no significant trend, but with more having less in materials and finished products on hand this year than report they are longer on inventory.

With 93 pct predicting wage costs to go up during the year, it's logical that prices are likely to go up too.

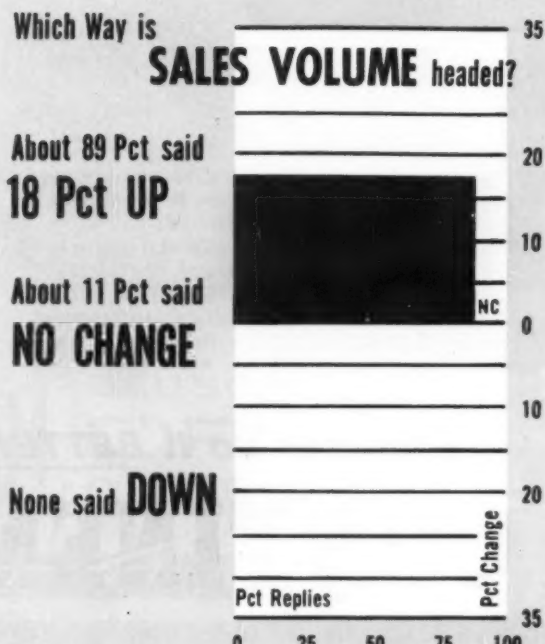
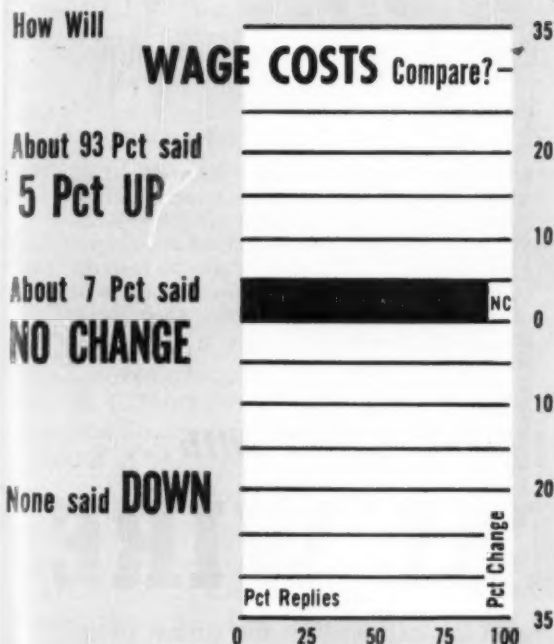


Customer Outlook

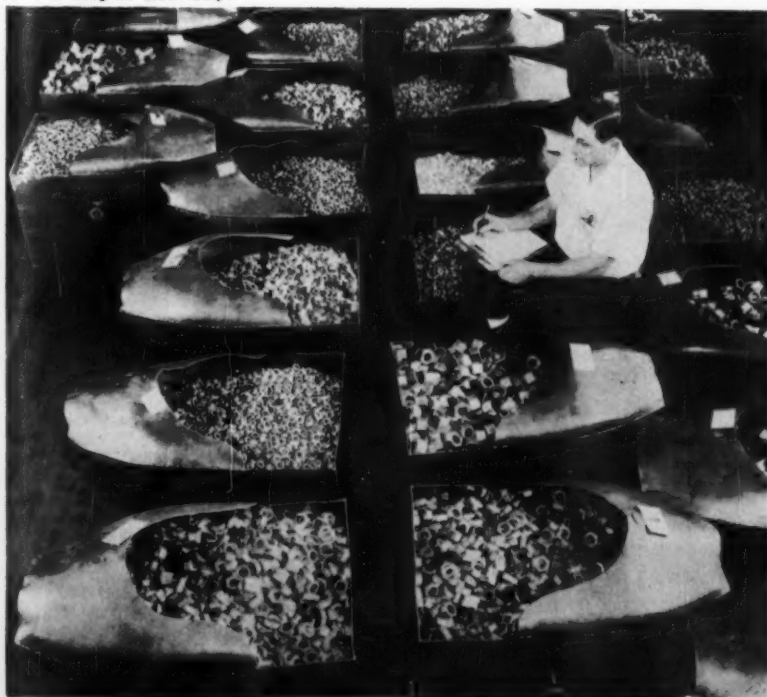
SIC 3452

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	39 Pct	40 Pct
100 to 249	31 Pct	38 Pct
250 and over	30 Pct	22 Pct



Jones & Laughlin Steel Corp.




What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

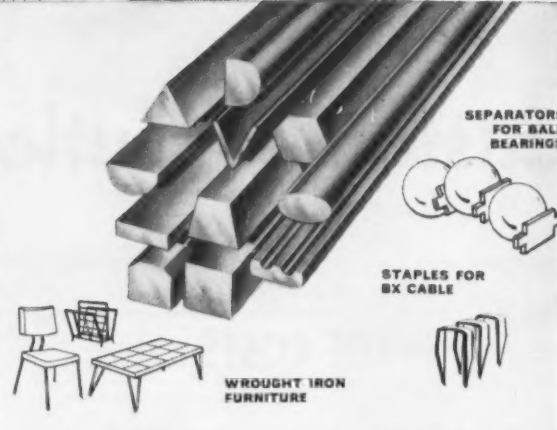
"Reliability must increase! There will be more competition in deliveries and performance in 1959."
H. T. Hollowell, Jr., President,
Standard Pressed Steel Co., Jenkintown, Pa.

"Increased demand will firm up prices."
T. R. Williams, President,
Wales Beach Corporation, Rockford, Ill.

Continued



ROUND WIRE—Sizes and finishes to meet almost any specification— $\frac{1}{8}$ " on down, in coppered, tinned, bright, galvanized, and other finishes. Made with exactness and uniformity to insure excellent forming and workability. Mill catchweight coils up to 600# or single length Econo-Coils up to 3000# can be supplied, depending on quality, finish and gauge.



STANDARD AND SPECIAL SHAPES—Cut costs where it counts most—on forging, stamping, rolling and machining for moldings, product trim or other fabrication. Many shapes and sizes are available—V-shaped, oval, square, rectangular, keystone-shaped, and others. It will pay you to check their many cost-saving possibilities.

You can do it **BETTER** at **LESS COST** with...

CONTINENTAL[®] WIRE

In practically any size, finish, temper or analysis in low and medium low carbon steels



FINE AND SPECIALTY WIRE
Staple wire, tag wire, shoe wire, florists wire, pin wire, coil binding wire—an almost endless list of fine wire for special application. Many finishes, tempers and sizes.



ECONO-COIL Continuous length wire coils of 2000# to 3000# catchweight, in sizes from 12 gauge through $\frac{1}{2}$ " diameter. Reduces scrap loss up to 90 percent. Shipped on returnable Econo-Coil reels.



LEVERPAK—FOR FASTER, CLEANER WIRE HANDLING
Saves scrap, reduces down time. Protects wire from moisture, dirt, and the damage of ordinary handling. Permits long, uninterrupted runs of 500# to 650#. Easy to ship and store.

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CONTINENTAL

STEEL CORPORATION • KOKOMO, INDIANA

PRODUCERS OF: Manufacturer's Wire in many sizes, tempers, and finishes, including Galvanized, KOKOTE, Flame-Sealed, Coppered, Tinned, Annealed, Liquor Finished, Bright and special shaped wire. Also Welded Wire Reinforcing Fabric, Nails, Continental Chain Link Fence, and other products.

Fasteners, continued

"The opening of the St. Lawrence Seaway will allow greater imports of fasteners and might seriously affect our sales structure since it might depress domestic prices." **O. G. Wobatz, Vice President**, Revere Screw Rivet Corp., Chicago, Ill.

"Trend toward heat-treated high strength fasteners. Revival of railroads. Some industrial upturn." **H. E. Smith, President**, Vulcan Rivet Bolt Corp., Birmingham, Ala.

"Soft, unsettled market needs stabilization." **W. E. MacWalker, Manager**, Marquette Bolt & Rivet Co., Chicago, Ill.

"Change in head style of fasteners will cause acute marketing problem." **E. C. Harris, Vice President**, Pawtucket Manufacturing Co., Pawtucket, R. I.

"The low inventories maintained by our customers may force us into expensive overtime in order to meet short-time delivery schedules." **J. A. Liddell, Vice President**, National Lock Washer Co., Newark, N. J.

"Improvements in manufacturing equipment will force greater production but will not yield a greater margin of operating profit." **A. Schnitzer, Vice President**, Schnitzer Alloy Products Co., Elizabeth, N. J.

"Increase of imported fasteners. Further development of unit sale, plastic, visible containers of screws, etc., at the retail level including food supermarkets especially assortments for household and do-it-yourself." **B. J. Sachheim, President**, Hercules Fastener Co., Chicago, Ill.

"Accomplishing new and additional distribution methods." **W. Grant, General Manager**, Wedge-lock Co., No. Hollywood, Calif.

"Technological changes in the aircraft and missile industry. Manufacturing of fasteners from new materials."



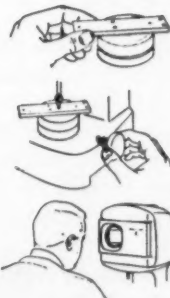
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OPTICAL GAGE**

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0" to 3" range... accurate to .000025"!

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- B** Turn knob to lower spindle... it will stop automatically on contact, with constant spindle pressure.
- C** See precise measurement at a glance... direct-reading scale is illuminated, magnified. No eyestrain, no conversion, no guesswork. Dependable measurement of depth, thickness, height, diameter, taper, angularity of surfaces, runout.

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☐ I'd like a free on-the-job demonstration of the new B&L DR-25 Optical Gage, with no obligation on my part.

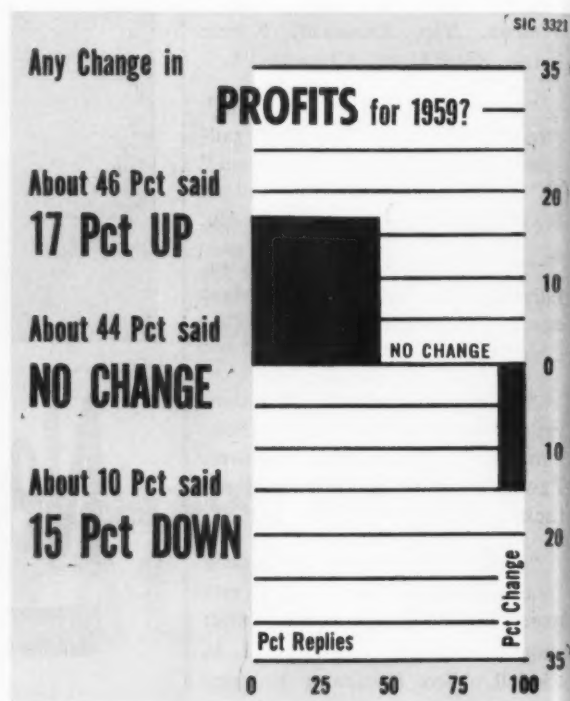
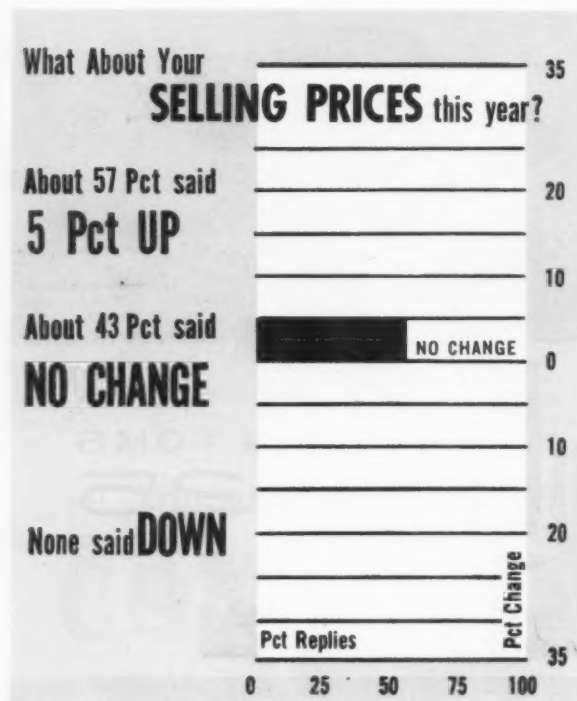
☐ Please send Catalog D-285.

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Company Title
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BAUSCH & LOMB



Gray Iron Founders Are a Bit



It's been a rough year and some didn't survive the price-cutting recession.

Ductile iron, new techniques, mechanization and design engineering now help many shops.

■ There are fewer gray iron foundries in business today than there were a year ago but most of those who remain are counting on more sales this year. There seems to be a spirit of aggressiveness replacing the price-cutting that many thought was the route to success.

Not that price-cutting has vanished; nor the problems of captive shops competing with the job foundry. But it's an ill wind: Many of the foundries that are no longer running were those who either didn't know their cost or ignored them. Or they lacked efficient equipment,

design engineering service, and sales planning.

There has been a great deal of foundry mechanization during the past year; new core preparation and molding methods have been introduced. Marketing and market research has been stressed by some, design engineering is getting more attention.

Ductile iron is getting a big play as gray iron foundrymen compete with steel and malleable castings producers.

On the negative side, many foundry executives are concerned with the inroads being made by aluminum castings. Still, any boom in automotive or housing will be a definite plus factor for most of them.

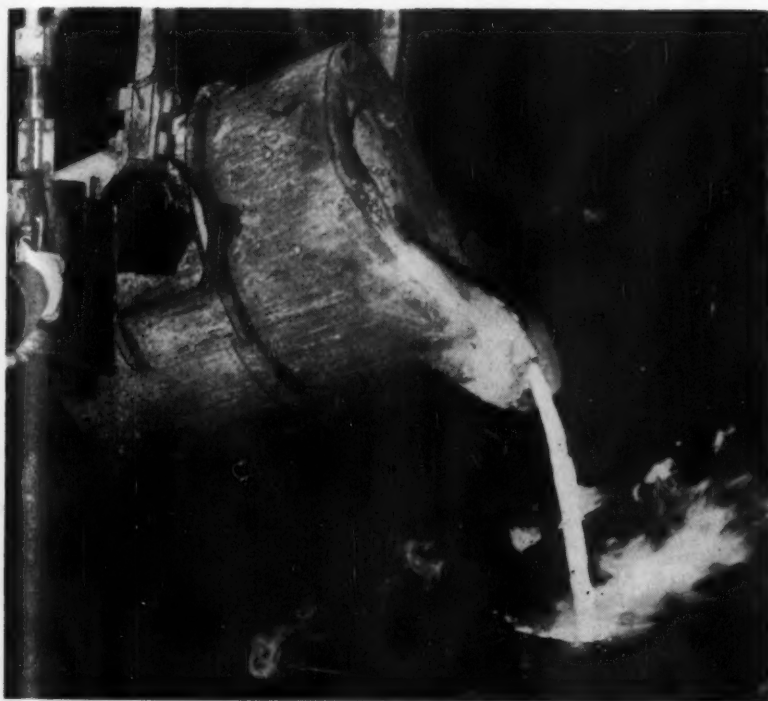
Backlogs are not pretty right now. They have slipped from a little over a month's production at the end of 1957 to a bit less than that as this

year begins. But 72 pct of those replying to The IRON AGE survey—and it is an excellent cross-section of this key industry—expect better times. Sales increases averaging 17 pct are expected by 72 pct of respondents.

But gray iron foundrymen are less optimistic than the metalworking average of this survey, in which 60 pct look for an average increase in profits of some 23 pct. In this end of the foundry business some 46 pct expect profits to be up about 17 pct.

Will gray iron castings cost you more this year? More than half the respondents say "Yes." A 5 pct increase is anticipated by 57 pct; the others expect to hold the line. With 91 pct expecting to have to raise wage costs by 5 pct this could explain the below normal profit outlook.

More Cheerful



Dodge Div.

SIC 3321

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	—	—
100 to 249	53 Pct	74 Pct
250 and over	47 Pct	26 Pct

What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Increased use of ductile iron is anticipated in 1959 and 1960 and more interest in the use of high alloy irons such as ductile Ni-Resist, Ni-Hard, etc., for heat, wear, corrosion and erosion applications." **P. R. Rentschler, Vice President, The Hamilton Foundry & Machine Co., Hamilton, Ohio.**

Continued

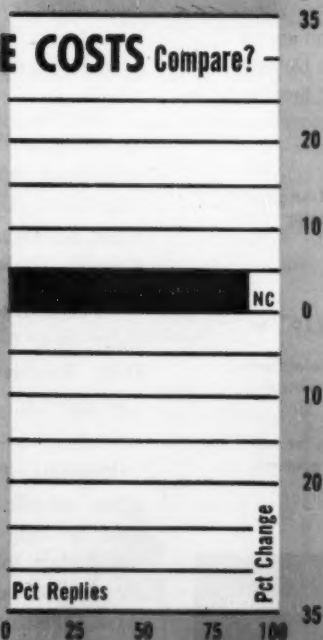
How Will

WAGE COSTS Compare? —

About 91 Pct said
5 Pct UP

About 9 Pct said
NO CHANGE

None said **DOWN**



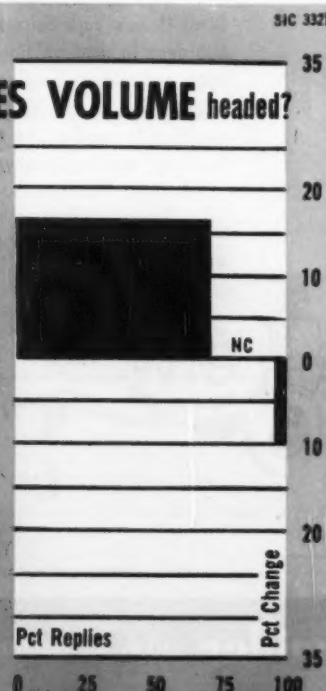
Which Way is

SALES VOLUME headed?

About 72 Pct said
17 Pct UP

About 24 Pct said
NO CHANGE

About 4 Pct said
10 Pct DOWN



"Inroads of aluminum." **W. H. Voll, Treasurer**, Sibley Machine Foundry Corp., South Bend, Ind.

"New cores and molding methods." **F. P. Probert, President**, Manufacturers Iron Foundry, Inc., Bridgeport, Conn.

"New home building financed at

reasonable interest. Heavy construction. Good farm income." **C. R. Spencer, Executive Vice President**, Lynchburg Foundry Co., Lynchburg, Va.

"Due to the closing of so many iron foundries we feel our business should be considerably better." **E. C. Benbert, President**, Fairmount Foundry, Inc., Philadelphia, Pa.

"Technical — Foundries must

develop something to sell besides price, quality, etc. Our attempt is CO₂ molding."

"Marketing — Foundries must learn to sell design engineering services. There are lots of casting applications in other methods of lubrication which could be converted to castings, if the foundries will point them out." **C. K. Robinson, Jr., Vice President**, Swayne Robinson & Co., Richmond, Ind.

"Increased demand for quality products, higher specification irons and ductile irons." **R. S. Thompson, President**, H. P. Deucher Co., Hamilton, Ohio.

"Restoration of 'normal' inventories should occur and stabilize business and prices." **W. M. Benson, Vice President**, Altens Foundry Machine Works, Lancaster, Ohio.

"The most important industry help during the coming year will be improved cost systems in foundries, more realistic selling prices, and greater emphasis on 'smart' marketing and research." **H. M. Frechette, President**, Fitchburg Foundry Div., Fitchburg, Mass.


"Design of castings in cooperation with customer's engineering department." **H. S. Faust, President**, Hansell-Elcock Co., Chicago, Ill.

"Selling customers on idea of spending a little more for closer tolerances which in the end will save them money." **P. Faewtleroy, Plant Manager**, National Grey Iron Foundry, Belvidere, Ill.

"The marketing program of the Gray Iron Founders' Society." **R. Hill, President**, East St. Louis Castings Co., E. St. Louis, Ill.

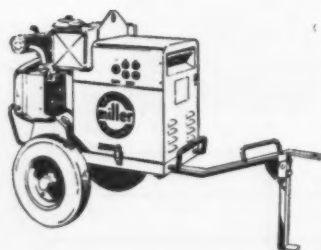
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**THE
ENGINE-
DRIVEN
WELDER/
POWER
PLANT
with the**



100% DUTY CYCLE

An original Miller design with performance standards, ruggedness and versatility that have made it a top hand from the Texas oil fields to New York dairy farms. Because, whether the AEA-200-L is hub deep in mud welding a derrick brace, or supplying power for lights and milking machines, or answering an emergency call aboard a repair ship. . . IT DELIVERS. Currently a best seller in the highway construction market, the Miller AEA-200-L is handily the "finest in the field," and here's why:



- All-weather construction
- Onan 12.9 h.p. air-cooled engine coupled directly to generator
- Full 225 ampere output
- 100% DUTY CYCLE
- 5 KW, 110/220v ac
- 1 KW, 115v auxiliary dc
- Uses any ac or ac-dc 1/16" to 3/16" electrodes
- Seven station amperage selection with continuous current control

Other Miller welder/power plants for metallic arc and TIG welding to 350 amperes.

Complete particulars will be sent promptly.

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*...to lower
metal cutting
costs*

VICTOR BLADES

FOR POWER HACK SAWS



Victor Blades are made of the finest alloy steel. Precision control of blanking, tothing, setting and hardening guarantees a finished product with "top on-the-job" quality.

Using production equipment of unique design, Victor provides you with a full line of blades capable of doing the toughest metal cutting jobs, faster, for a longer service period.

FOR BAND SAWS



Victor Blades are made for service, packaged for ease of handling. New Reel-Pac Dispenser holds 100 feet of blade in sturdy, permanent reel. You simply draw out the length you need.

Victor makes a variety of Band Saw Blades welded to specification and in 100, 250 & 500 ft. lengths to meet your metal cutting requirements... Standard, Skip Tooth, Profile, Gored Tooth.

Free Literature on Metal Cutting

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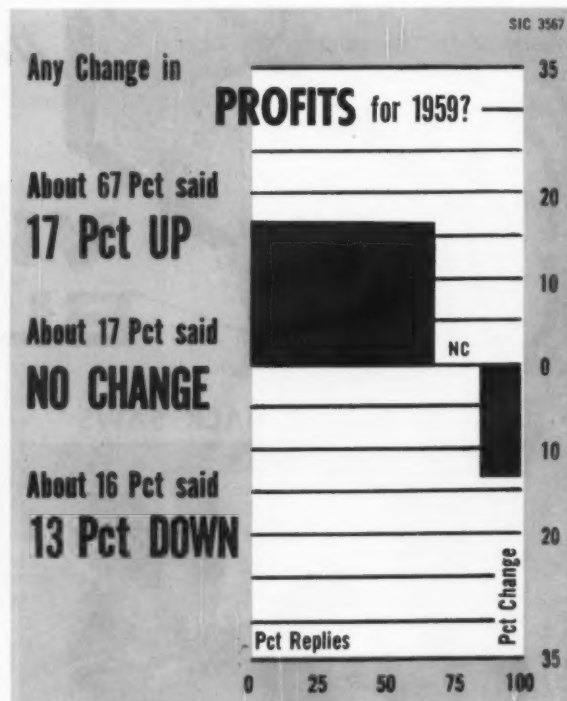
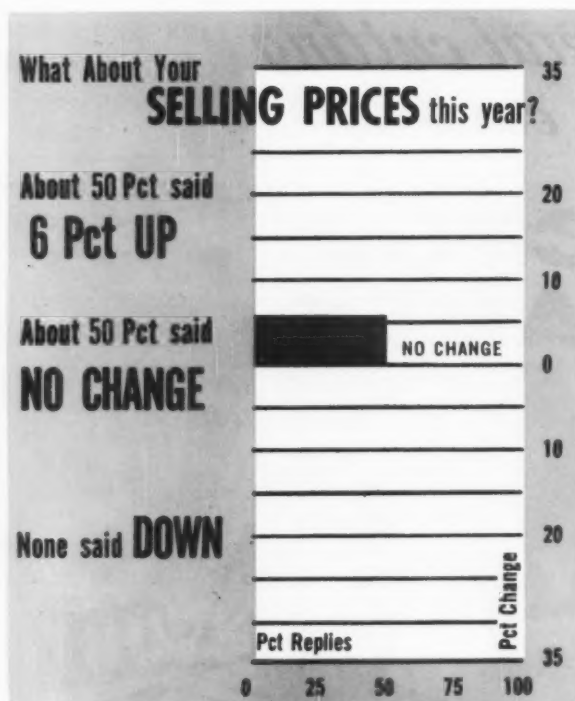
Name _____

Title _____

Address _____

City _____ Zone _____ State _____ 1700

New Ideas Will Spark Pickup in



Many builders plan really new and unique units in drive at replacement market.

Survey shows that half of the industry expects to raise prices by about 6 pct.

■ The men who make equipment for melting and heat treating are not sitting back waiting for a capital equipment boom to lift them out of the doldrums. With less work going through their shops in 1958, many used the breathing period to work on new products.

As a result, 1959 will probably set an all-time record for innovations in heat treating equipment. As you would expect, several furnace builders have increased automation of their units. The idea is to obsolete hand-fed furnaces by offering savings in operating costs that cus-

tomers will find it hard to reject.

Besides this there will be new principles and techniques which are expected to help in replacement business even if capital expansion continues to drag its heels.

Last year saw new furnace orders down more than 40 pct from the 1957 level but most furnace builders (88 pct of those replying) look for a definite upturn of some 16 pct in sales with a corresponding increase in profits. However, 16 pct fear that their profits will dip another 13 pct.

They expect prices to follow the overall metalworking trend. Half of the furnace builders expect to have to boost quotations about 6 pct. Nine out of ten don't see their way around a wage increase, which could increase wage costs by another 6 pct.

Heating equipment backlogs were about the same at the end of 1957

as they were going into 1959: 103 and 97 days' production respectively.

Compared with all industries surveyed (see the forward part of this survey section) heat treating equipment backlogs look fairly good. Only one industry, controls and switchgear, has larger backlogs.

Here are a few of the things you can expect furnace salesmen to offer you this year: (1) a gas fired salt bath furnace; (2) a furnace in which gas is fed through porous brick to burn at the brick face; and (3) new automated furnace designs to improve product quality.

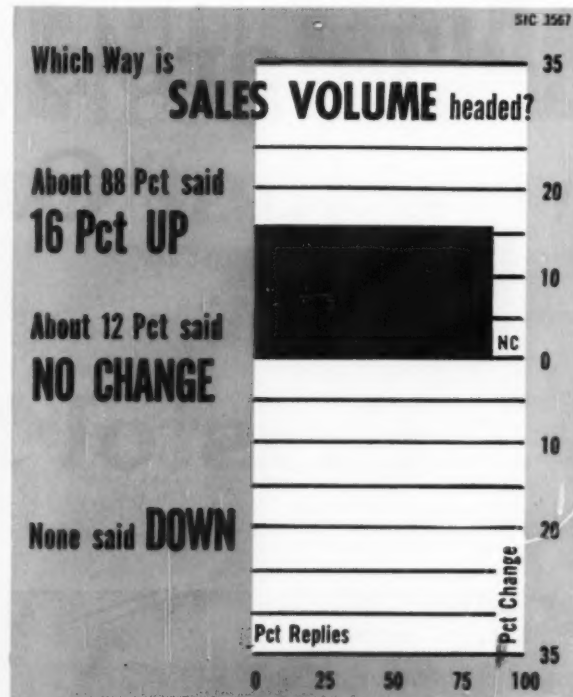
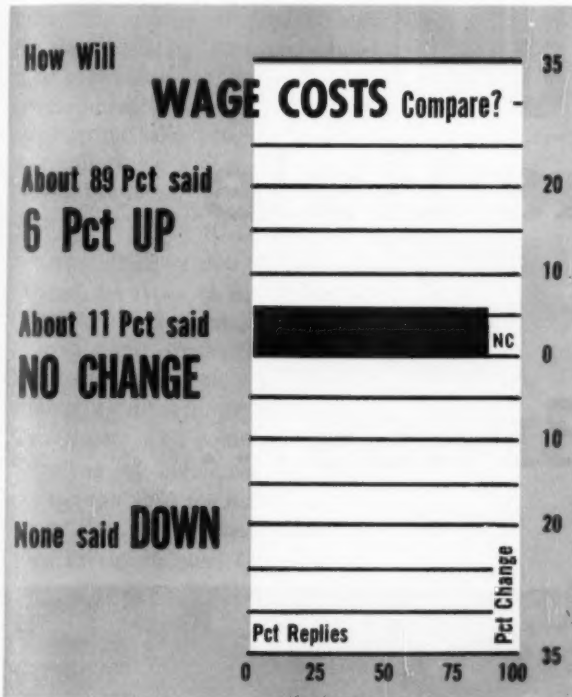
Backlog data, like that on inventories, is weighted by plant size. Weighting is based on The IRON AGE Census of Metalworking, which shows employment for respondent plants and for the industry as a whole.

Heat Treating Units

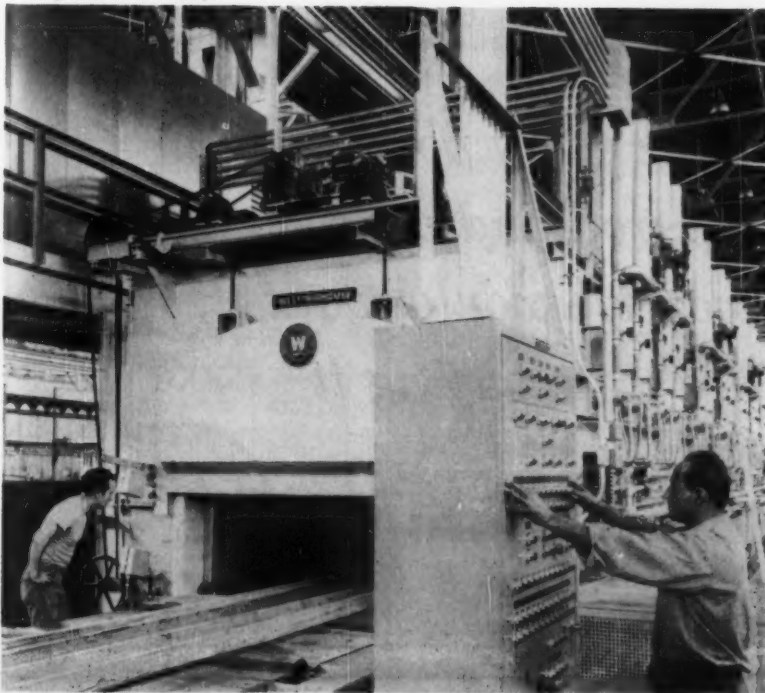
SIC 3567

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	57 Pct	61 Pct
100 and over	43 Pct	39 Pct



Westinghouse Electric Corp.



**What
Industry Executives
say:**

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Many developments made by industry during 1958 will result in new production processes and new production equipment in 1959. Research on methods and materials for the missile program have opened new fields for technical equipment."
C. H. Stevenson, Vice President,
Lindberg Engineering Co., Chicago, Ill.

Continued



**There's
just One Rule
at
Bristol Brass...**



*To make every pound of
strip, rod and wire
the way we would want it,
if we were buying it*

Bristol-Fashion
means Brass at its best



THE BRISTOL BRASS CORPORATION • SINCE 1850, MAKERS OF BRASS STRIP, ROD AND WIRE IN BRISTOL, CONNECTICUT
Bristol Brass has offices and warehouses in Boston, Buffalo, Chicago, Cleveland, Dayton, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, Rochester, Syracuse.

"Because plant and equipment expansion will lag the general recovery, we have through research and product development developed new furnace designs that will improve the quality of product and obsolete existing furnace equipment. Because of research and development and an aggressive engineering sales program we feel will create a demand." **H. M. Heyn, President, Surface Combustion Corp., Toledo, Ohio.**

"Acquisition of new business will expand the types of equipment we can offer, and increase our engineering and production scope. Marketing has been expanded by adding established representatives throughout the country. Impact extruding of aluminum will also expand the need for melting equipment." **E. E. Staples, Executive Vice President, Hevi Duty Electric Co., Milwaukee, Wisc.**

"Expansion of line of salt bath furnaces to include patented gas-fired designs without metal pots, suitable for high temperatures." **L. B. Rosseau, President, Ajax Electric Co., Inc., Philadelphia, Pa.**

"Keeping pace and, if possible, anticipating the day to day advances in industrial technology. There is particular interest in the demands for equipment to meet higher and higher temperatures and pressures required by new industrial processes and techniques." **C. B. Kentnor, Jr., President, W. S. Rockwell Co., Fairfield, Conn.**

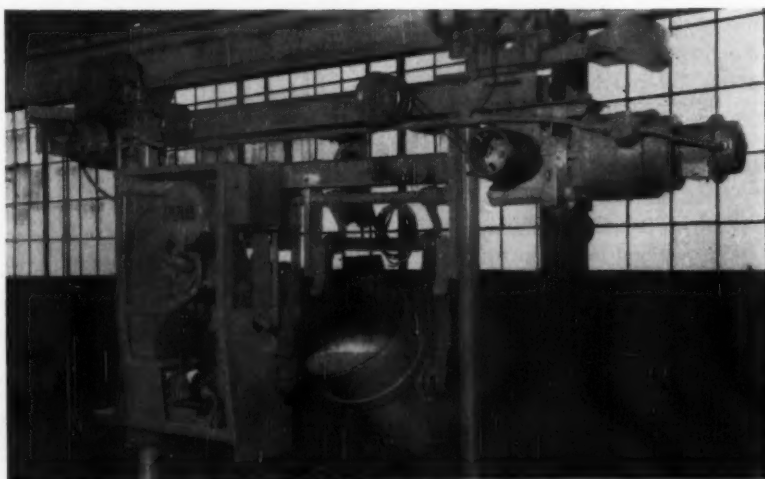
"We are introducing nine new products and entering four other new fields for our products. We see the 1959 outlook for others, as well as ourselves, based on loosening up of capital expenditures and orders placed against existing quotations." **W. E. Sauter, General Manager, C. I. Hayes, Inc., Cranston, R. I.**

SHEPARD NILES

HOT METAL CARRIER

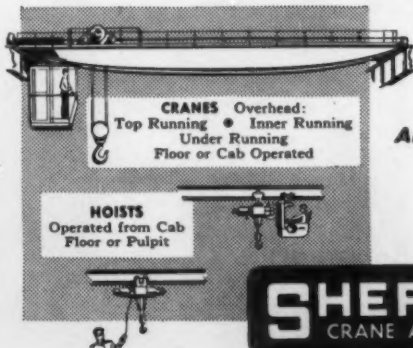
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Industrial Truck Makers

Little change in price tags, a 13 pct gain in sales volume are predicted by an industry that fared better than many in '58.

Backlogs are about the same as they were a year ago.

■ Industrial truck makers are a bit more optimistic than the average metalworking industry executive about '59 prospects. In last year's IRON AGE survey they expressed similar optimism and they were on the right track.

That is, they were correct in that industrial truck shipments during 1958 declined less than some other segments of metalworking, showed a pickup beginning in September.

This year, not quite half (42 pct) expect to raise prices very slightly. Most (58 pct) plan to hold the line. Actually, the industry is not alone in its desire to see some

stabilization in prices. If sales volume picks up—and four out of five feel it will—this may be less of a problem than it was last year.

Specifically, 83 pct of industrial truck manufacturers who replied to this IRON AGE survey expect better sales in 1959. Their average estimate for the increase is 13 pct. The balance see sales holding steady but none looks for a sales dip.

As for business on the books, the situation is no better than it was at the beginning of 1958. The current survey showed average backlogs estimated at 72 days production coming into 1959. These companies started the year with 79-day backlogs. Backlog figures are weighted by the plant employment of those replying to the survey. Figures on prices and profits, wages and sales are unweighted individual opinions.

None of the respondents expect lower profits this year. A third think they'll be the same, the rest look for an average increase of 28 pct.

As usual, wages will probably be boosted again in 1959. At least, that is the view of 92 pct of those replying; they figure the increase in wage costs at about 4 pct.

The industry has a potent trend working in its favor—the need to mechanize to stay competitive. But few see a capital equipment boom coming soon. As a result, you can look for some new models, smaller and lighter trucks and other innovations designed to capture sales.

The box, "Percent of Replies by Plant Size" shows employment in plants whose executives replied to this survey compared to the employment of all U. S. industrial truck builders.

Yale & Towne Mfg. Co.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"The industry's National Exposition which will be held in June, 1959, will bring out many new products and accessories.

"Price stabilization would help firm up the market and better product knowledge would create sales."

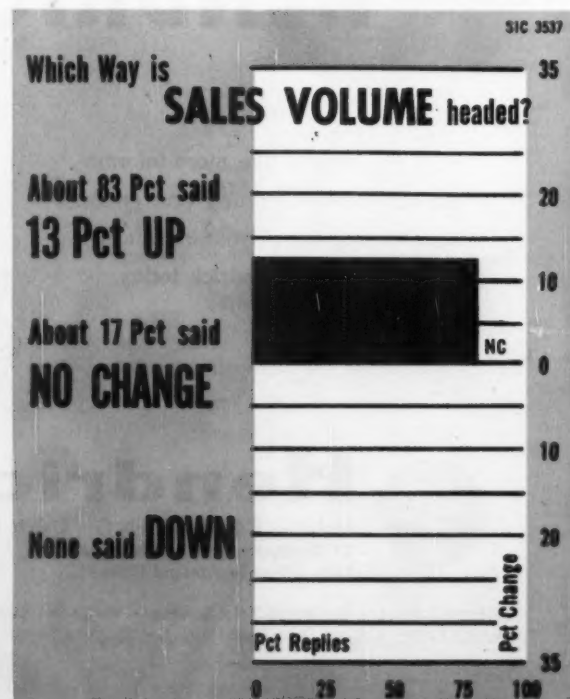
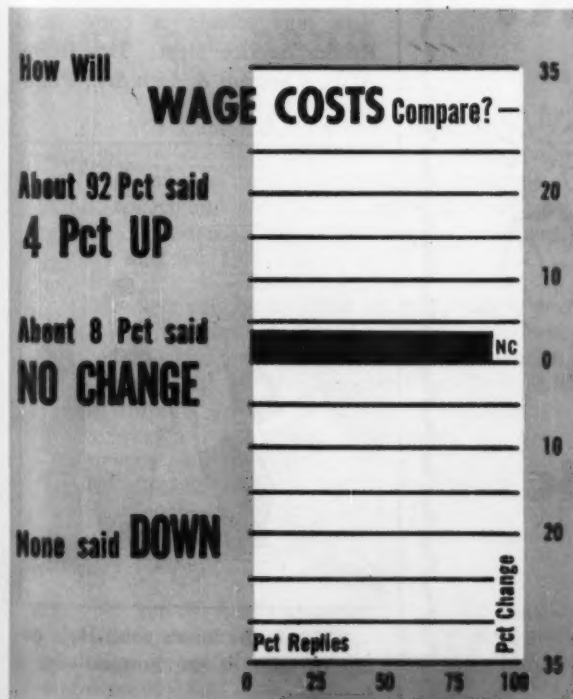
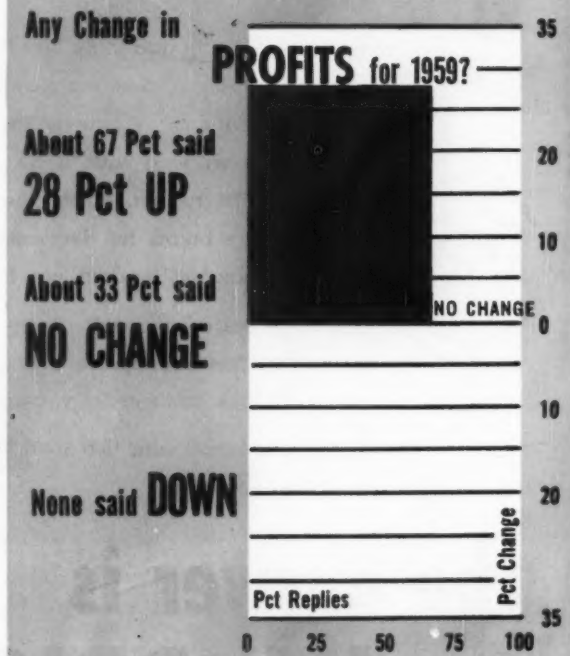
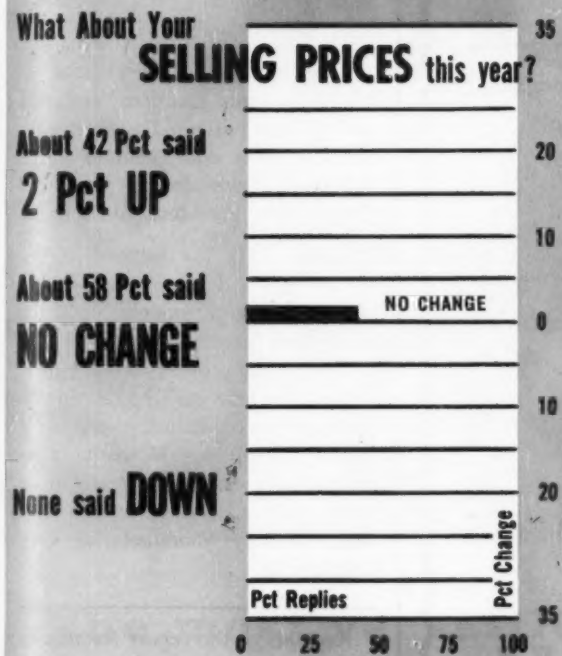
C. E. Smith, President, Towmotor Corporation, Cleveland, Ohio.

"Demand for greater automation

Continued

See Steady Prices

SIC 3537 Percent of Replies by Plant Size:		
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	29 Pct	23 Pct
100 to 249	39 Pct	46 Pct
250 and over	32 Pct	31 Pct



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Industrial Trucks, continued

or mechanized handling coupled with the realization that our type of equipment can be integrated with other mechanical equipment should offset the possibility of little improvement in industrial construction." **K. O. Heath, Sales Manager, Nutting Truck & Caster Co., Fari-bault, Minn.**

"The message of 'mechanize to stay in business' has many converts and the trend is rapidly increasing. It will require equipment designed and manufactured for this purpose." **J. A. Clark, President, St. John & Co., Chicago, Ill.**

"Technical development — New smaller, lighter models of fork trucks will help sales.

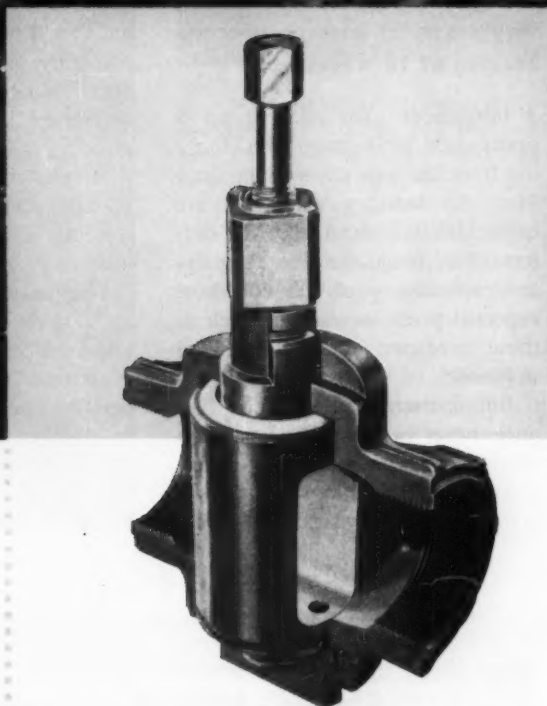
"Marketing problem—We will be very dependent on capital equipment plans of industry—which I expect to call for increased purchases both for replacement and expansion." **C. W. Henkle, President, Mercury Manufacturing Co., Chicago, Ill.**

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., The IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.



"This is the boss's son. He's going to start at the bottom—for a few days."

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The ACF Lubricated Plug Valve demonstrates its versatility by operating efficiently and economically in a wide range of service applications: in chemical plants, sewage and water works, paper mills, oil field production, refining, mining operations, coke plants—it's a long list.

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Instrument Manufacturers Sound

Manufacturers of measuring and control instruments have had a fairly prosperous recession.

Most expect better profits as they enter '59 with an average backlog of 10 weeks.

Instrument sales chalked up a pretty good 1958, have been climbing from the year's low point since May. So industry executives are quite cheerful about the '59 outlook. Percentagewise, the chart figures on these pages do not show expected profit increases as high as those predicted for metalworking in general.

But instrument makers, on balance, never ran into the depression that hit other segments of metalworking. And they look for an even better picture this year. Some 83 pct

of those replying to The IRON AGE survey expect a 14 pct increase in sales volume and 62 pct expect their profits to climb by 20 pct.

There will be some price cuts, but they'll be scattered—are anticipated by only one in 20 respondents. More than half (52 pct) see an average advance of 4 pct on their price tags.

Almost all expect to have to inch up wage costs by some 4 pct, which is a little less than the metalworking average of 5 pct.

Some manufacturers of measuring and control instruments plan to refine their marketing and sales organizations this year. You can expect field and sales engineers to try to develop more details on your special needs and to seek out new applications. Many will offer new products; there will be more em-

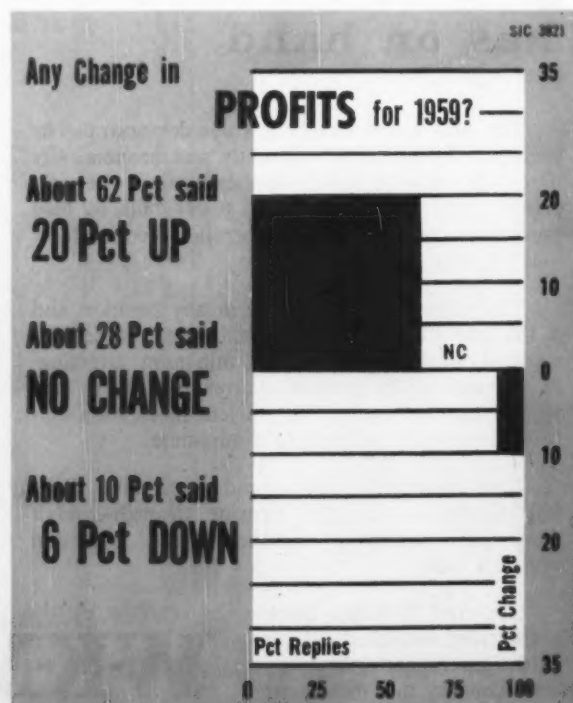
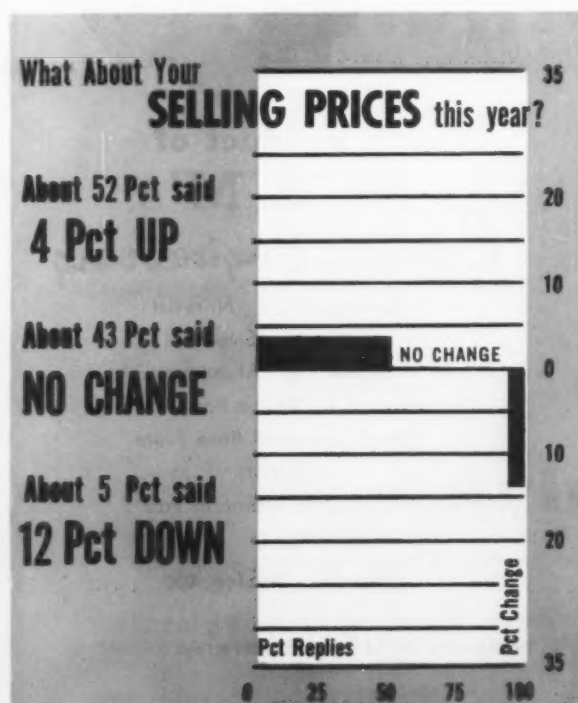
phasis on engineering and on customer needs.

A few fear dips in sales and profits because of changing emphasis in aircraft vs missile hardware. And the leveling off in new plant and equipment spending doesn't help, in the view of several respondents.

Backlogs in the instruments field are off about 24 pct from what they were a year ago. Still, they are among the healthiest in the metalworking field—stand at about 10 weeks' production today against nearly 3 months' at the end of 1957.

Backlog figures are weighted on the basis of plant size as shown in The IRON AGE Census of Manufacturers. Estimates on sales, prices, etc., are unweighted opinions.

The accompanying box shows the pattern of survey replies in relation to plants of various sizes in the instruments industry as a whole.



An Optimistic Note



Tool Steel Gear and Pinion Co.

SIC 3821

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	28 Pct	28 Pct
100 to 499	45 Pct	54 Pct
500 and over	27 Pct	18 Pct

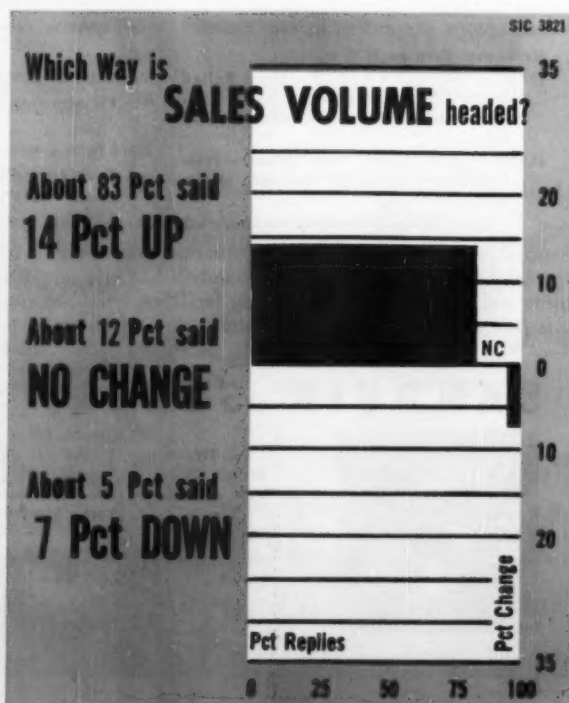
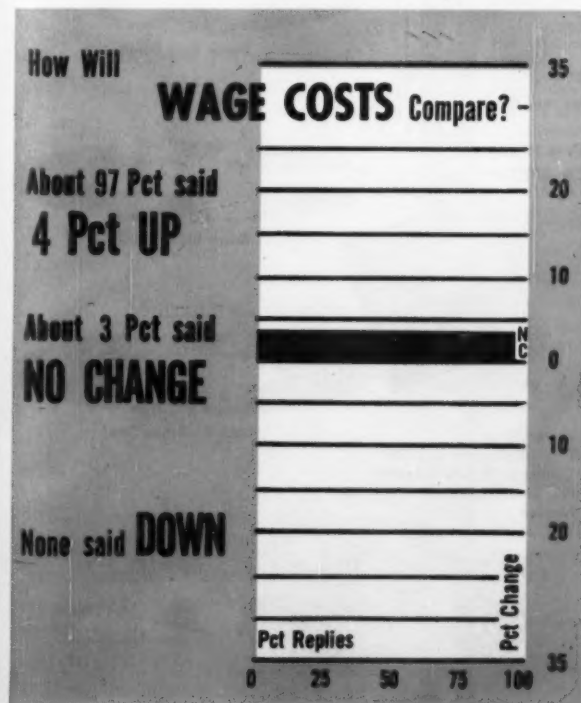
**What
Industry Executives
say:**

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"A more accurate and detailed analysis of operating requirements in the field will undoubtedly result in engineering modifications and improvements.

"This carries over into the basic marketing problem wherein our field representatives are required to contact users of our products more often and more carefully—to make

Continued



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ELASTIC LIMIT (.01% Proof Stress) — From
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Sandvik stocks a wide variety of qualities and sizes of cold rolled specialty strip steels. In addition Sandvik has rolling, slitting, edge-filing and hardening and tempering facilities. Send for your copy of this free brochure which gives specific data on the leading types of Sandvik steels.

Sandvik 2R25 is exceptionally tough and resilient, much more formable than hardened and tempered steel, has up to 10 times the fatigue life of ordinary carbon spring steel and has excellent corrosion resistance under varying atmospheric conditions.

MODULUS OF ELASTICITY — 27.7 to 35.6 x 10⁶
PSI according to size and finish

SIZES (with extremely close tolerances)
Thickness — .0016" to .035"
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HAND SAWS & TOOLS



SS-178

sure—that engineering specifications reflect the end use of our instruments.” **C. L. Hastings, President,** Rochester Mfg. Co., Inc., Rochester, N. Y.

“New marketing areas, or rather acceptance in new areas.” **C. D. Reiv, Vice President & Treasurer,** Magnaflux Corp., Chicago, Ill.

“Increased knowledge of specific applications for our products by industry through organized field trips by plant engineers.”

“New products will help us. Our problem is wage increases and taxes.”

“Since we expect a reduction of 5 pct in selling price, this loss of income must be offset by additional sales. Additional sales will require more intensified selling and sales contracts and possibly more salesmen.

Some markets are disappearing entirely while others have become profitless. Additional technical development will be required to product the new items to replace them. We expect to increase our engineering department.” **A. F. Craver, Manager,** Patrol Valve Co., Cleveland, O.

“Whether or not, and when, the market will stand adequate price increase.”

“Housing & development of export field.”

“New electronic applications to instrumentation.” **W. L. Calderine, Treasurer,** Sparling Meter Co., Los Angeles, Calif.

“Price of copper and stainless steel.”

“The most important item in our progress during 1959 will be the trend in expenditures for plant and equipment. When this figure turns up from the \$31-32 billion level toward the previous high of \$37 billion, we will be ‘on our way’ ”.

IMPROVE YOUR PROFIT PICTURE WITH

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GUILLOTINE BEAM PUNCH

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NO. 7 DETAIL FLANGE PUNCH

100-ton punch, flange-punches I-beams in only 2 passes instead of 4 — eliminates the end-for-end turning of beams. Punches 1 1/4" hole through 1" mild steel.



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But you will never know the costs you can save — the manpower you can save until you put a Beatty machine to work in your shop. For either 24-hour-a-day operation or intermittent use, they're bears for work — require a minimum of maintenance, reduce downtime — cut costs on any metal-working job.

When “CUT COSTS” is the order of the day, tool up with Beatty equipment, for efficient, low-cost metal fabricating.

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MACHINE & MFG. CO.

936 150th St., Hammond, Ind.

Machine Tool Builders Forecast

Foreign competition, unrealistic depreciation and a lag in capital spending confront builders.

But industry faces a tremendous cost-cutting problem which means more machine tool orders.

■ Most machine tool builders can tick off their problems in rapid succession. They are:

1. A continuation of the lag in capital spending.
2. Depreciation policies that they consider unrealistic.
3. Foreign competition.

And looking back on a year which saw shipments and orders drop to the lowest points in years, they have every reason to view the future with misgivings.

But most of them believe that new developments and the need of

their major customers to keep cutting costs will result in better sales and profits this year.

On the technical front, numerical controls are expected to make the greatest single impact for the industry.

Evidence of the recession is reflected in backlogs, which were whittled away from 89 to 57 days. (These figures are weighted on the basis of plant employment.)

This backlog decline looks better on the surface than it really is. Because many plants cut their work force substantially during the year, one day's backlog measured in today's capacity is probably significantly less than a day's backlog a year ago.

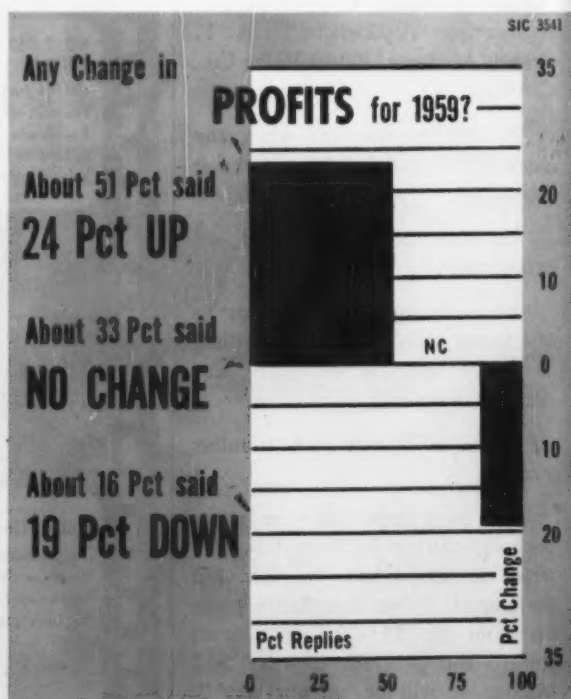
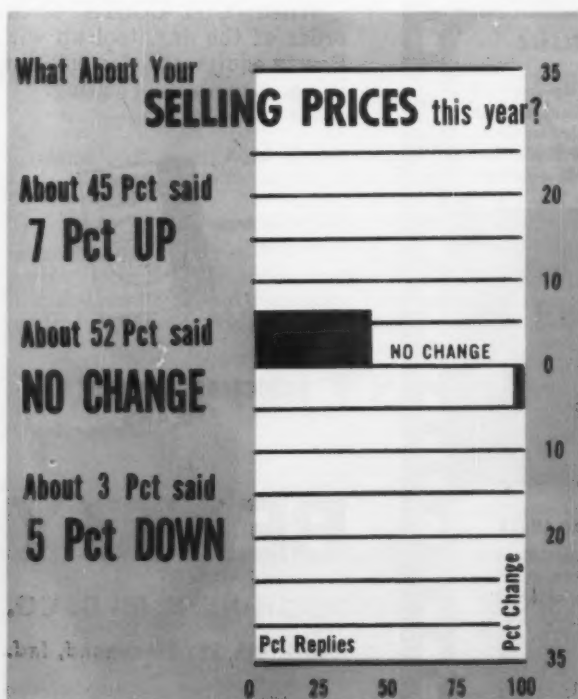
From the customer viewpoint, price is very important. Little change can be expected this year, in spite of rising costs.

A small majority of 52 pct don't see any immediate change in prices; 45 pct think prices will be up 7 pct; a small minority of 3 pct believe they will drop about 5 pct.

The hesitation to forecast price increases is notable in that 91 pct expect wage costs to go up 5 pct, a figure that is average industry-wide.

Overall, 71 pct expect sales to go up an average of 21 pct. Of the remainder, 22 pct expect no change; 7 pct a 10 pct drop. In profits, 51 pct expect a gain, averaging 24 pct; 16 pct expect a decline of 19 pct, and one-third forecast no change in earnings.

Competition from foreign machine tools in the domestic and world markets are causing headaches among some U. S. builders. Low wage rates in foreign plants offer considerable price competition.

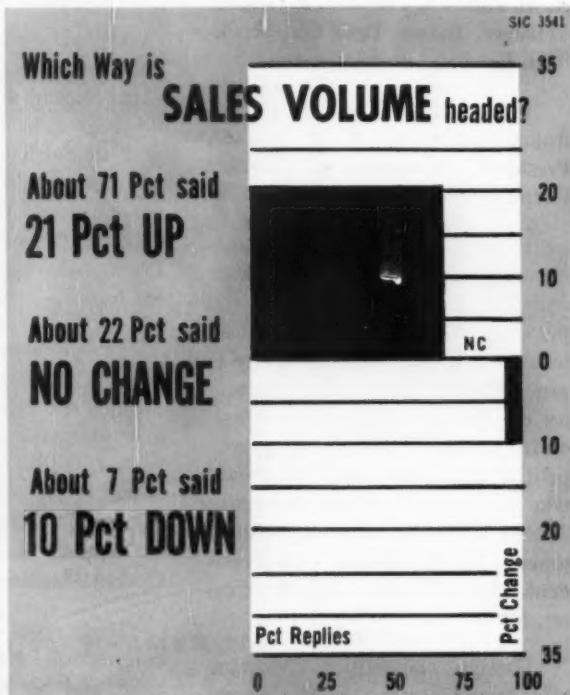
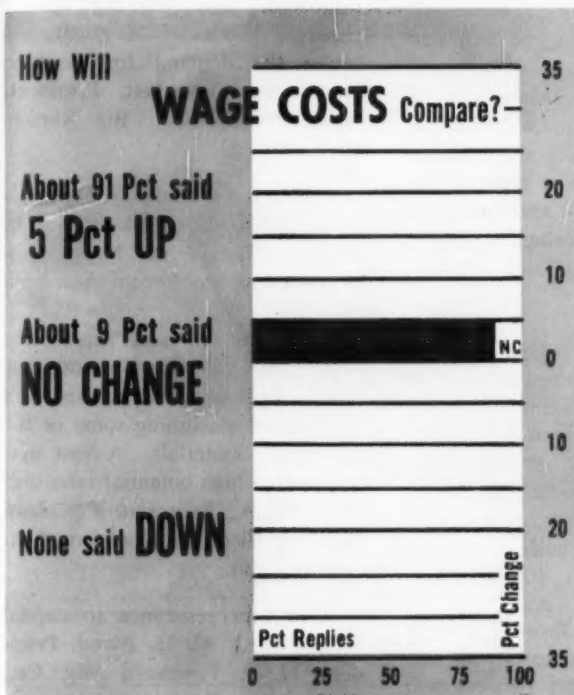


Moderate Comeback

SIC 3541

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	32 Pct	35 Pct
100 to 249	33 Pct	27 Pct
250 and over	35 Pct	38 Pct



Alco Products, Inc.



**What
Industry Executives
say:**

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"The impact of increasing quantities of low cost made from foreign sources, will ultimately compel American producers to discard their obsolete equipment and methods, if they want to retain their markets. The machine tool market for 1959 (in my opinion) is definitely replacement." **A. V. Bodine, President & Treasurer, Bodine Corp., Bridgeport 5, Conn.**

Continued

"Automation and labor saving machinery largely in the high production industries such as auto and agricultural implements. Government buying for defense may help." **A. M. Johnson, President & General Manager, Barnes Drill Co., Rockford, Ill.**

"Introduction of numerical controlled machines." **F. J. Trecker, President, Kearney & Trecker Corp., Milwaukee 14, Wisc.**

"I believe that several new machines in our line plus general labor peace in the larger industries and the election out of the way, will all tend to improve capital spending in general and result in more business for us. Many industries must modernize to stay in business in a competitive sense and therefore should take advantage of today's more productive and more accurate machine tools." **C. M. Beach, Vice President, Heald Machine Co., Worcester, Mass.**

"Foreign competition. Machine tools from Germany, Italy, England come into the U. S. A. at about one-half our selling price. Main problem is the labor cost differential—U. S. A., \$3.00 per hour, foreign \$0.80 per hour. **A. L. McKay, Vice President & General Manager, Cincinnati Bickford Div., Cincinnati, Ohio.**

"The largest factor in capital goods will be the prospect of accelerated inflation. Rising prices will spur faster buying as well as the increasing awareness of obsolescence and the high manufacturing costs resulting from it in today's competitive markets." **N. D. MacLeod, Jr., Vice President & General Manager, Abrasive Machine Tool Co., E. Providence 14, R. I.**

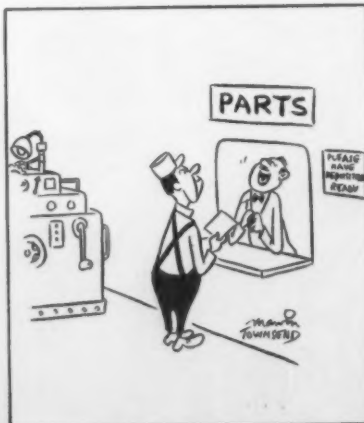
"Slow activity in metalworking will depress the machine tool industry most of 1959." **Thomas Kattnig, President & General Manager, Kempsmith Machine Co., West Allis, Wisc.**

"Foreign competition at very low prices." **R. E. LeBlond, President, R. K. LeBlond Machine Tool Co., Cincinnati 8, Ohio.**

"Competing with foreign makes of machine tools, manufactured at labor rates about 25 pct of our own, and delivered in this country at prices $\frac{3}{4}$ to $\frac{3}{4}$ of ours. These machines are well designed and well built, and even our own government is purchasing them in large quantities because of the price differential at a time when our own machine tool industry is in a severely depressed state." **H. D. Marshall, Vice President-Manufacturing, Gallmeyer Livingston Co., Grand Rapids, Mich.**

"In our own business we anticipate increased sales during 1959 through the introduction of several new automatic tracer and tape-controlled milling and profiling machines of single-spindle, multi-spindle and multi-station transfer types." **G. Gorton, III, President, George Gorton Machine Co., Racine, Wisc.**

"High costs in face of foreign competition. Rising costs with low tariff and no import barriers will make it more difficult to maintain volume high enough to show a reasonable return on investment." **E. A. Dunning, Vice President & General Manager, Edlund Machinery Corp., Cortland, N. Y.**



"Parting is such sweet sorrow, but we're out of what you want, so come back tomorrow."

"Break-even prices being quoted by competition."

"We look for no new developments which will have a significant effect on the industry. Any change will have to come about through a change in tax laws which would encourage the replacement of obsolete equipment. Some protection against imported goods would greatly increase the demand for machine tools." **Kurt Hanchett, President, Hanchett Mfg. Co., Big Rapids, Mich.**

"There is a tremendous new market in electrolytic metal removal. In the last 45 days, our business on this class of equipment has been tremendous."

"Our research and engineering departments are working on new pieces of equipment to be used with methods of machining some of the new space materials. A vast new field with a high potential sales outlet." **W. A. Ferguson, President, Standard Electrical Tool Co., Cincinnati, Ohio.**

"Customer resistance to capital expenditure." **C. H. Bland, President, H. P. Townsend Mfg. Co., Elmwood 10, Conn.**

"Solid fuel propellants."

"Capital equipment, if increased, will be beneficial." **P. C. Cooke, President, Toledo Pipe Threading Machine Co., Toledo, Ohio.**

"Development of tape controls for milling machines." **Charles Straus, President, U. S. Burke Machine Tool Co., Cincinnati, Ohio.**

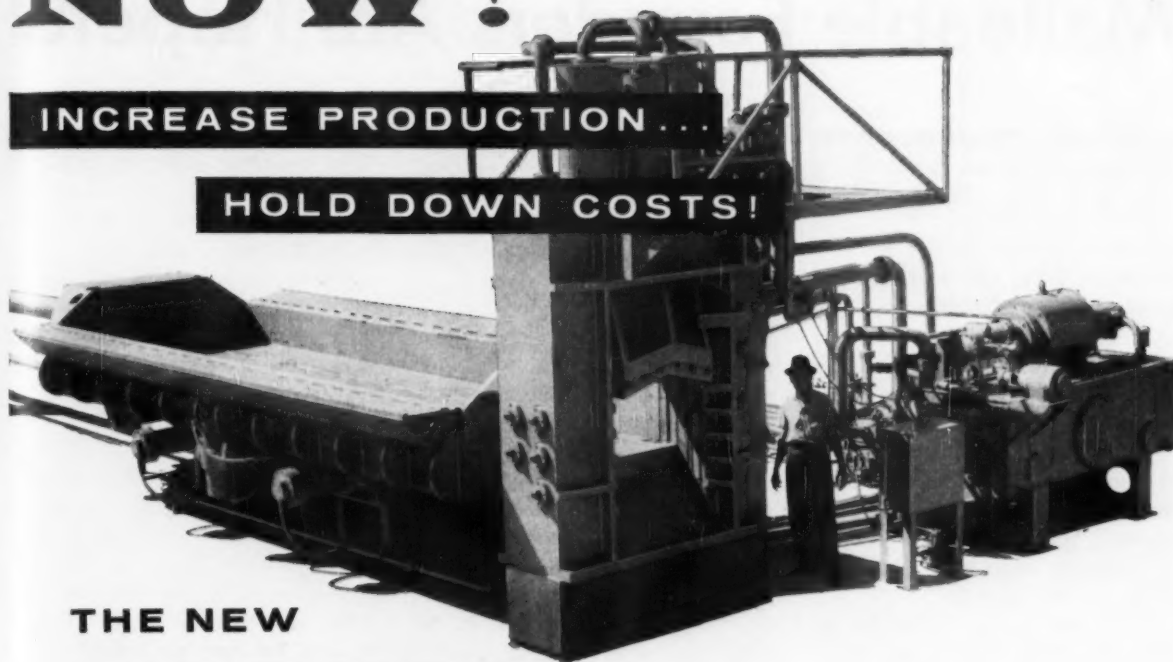
"The inroads of foreign machine tools in the American market is a serious threat to our industry growth and to our entire standard of living. We cannot compete with cheaper labor of Europe. Both our Government and American labor leaders must awaken."

"Technical — Numerical control systems. Marketing — Obsolescence and desire for greater accuracy in machine tools. Particularly for those used in defense programs."

MODERNIZE NOW!

INCREASE PRODUCTION...

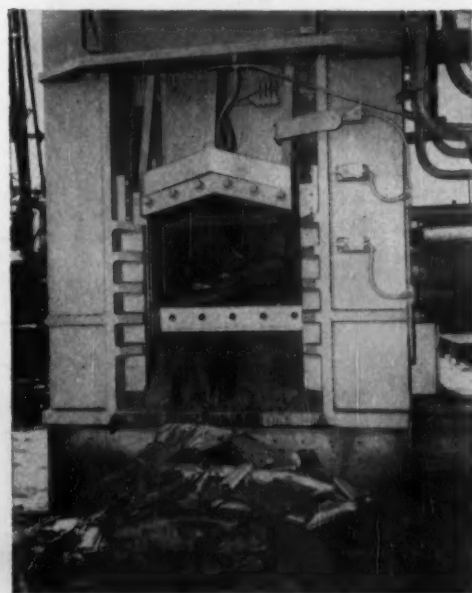
HOLD DOWN COSTS!



THE NEW

HARRIS BS-350 BALER- SHEAR

AUTO FRAMES and bulky scrap work through easily. The Harris Baler-Shear was designed to eliminate problems arising from the preparation of bulky scrap. It incorporates the principles of baling and shearing.



SPECIFICATIONS

size of charging box	264 x 83 x 41"
shear opening height	20"
shear opening width	36"
shear force	350 tons
floor space required	55' x 20'

**HARRIS FOUNDRY
& MACHINE CO.**

Hydraulic Engineers Since 1889

CORDELE, GEORGIA

► *Talk with a Man from Harris*

Malleable Founders Are Hopeful

Malleable executives know they have a big job to do.

But they believe hard selling, conversions, and sales promotion will bring sales and profit improvements in 1959.

■ Malleable foundrymen apparently believe that business has no direction to go but up.

After a year in which monthly shipments fell off as much as one-third when compared with the previous year, nearly everyone in the industry expects to see their profits on the upgrade.

They don't expect it to be an easy job. Many believe they have their hands full in holding their own markets. But just as many believe there is a big opportunity of gaining new customers by conversions to malleable.

They are starting the year with a slightly bigger level of backlogs than a year ago (28 days compared with 22) and are counting on a 20 pct increase in sales volume in 1959.

Although most metalworking expects to see a major improvement during the year, malleable foundrymen are more optimistic than most. A full 92 pct believe sales volume will go up, against only 8 pct with a pessimistic attitude. Estimates average out to the collective figure of 20 pct gain in volume this year.

In fact, malleable foundry executives show a significant degree of unanimity in their outlook for the year. There is little dissent apparent in answering questions on prices, profits, wage costs and sales volume as indicated in charts.

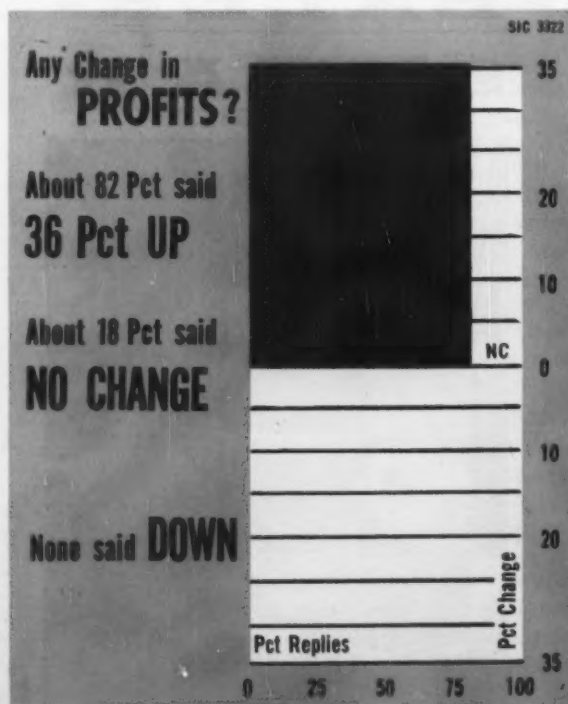
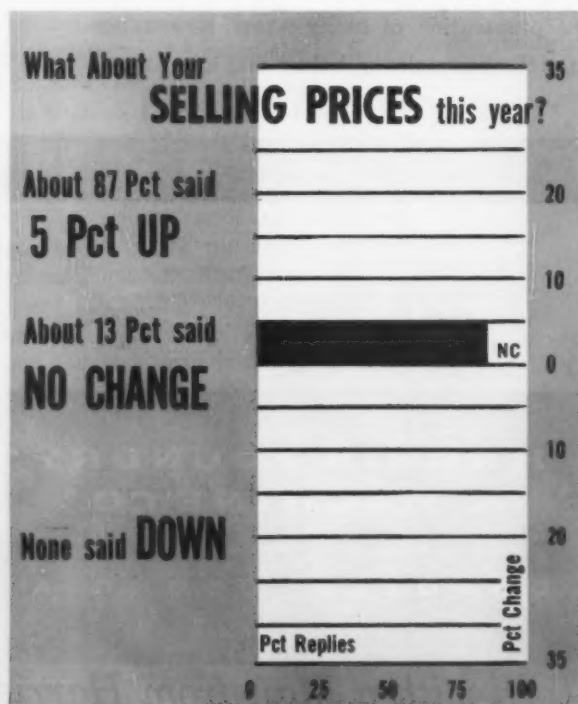
On wages, 92 pct expect they will give ground on wages and only

8 pct believe they can hold the line. The collective estimate indicates average wage costs will go up 5 pct. None went on record predicting a wage decline.

Almost as many, 82 pct, believe profits will go up. With the industry almost unanimous in predicting wage and other cost increases, and still counting on better profits, the inevitable result apparently will be higher prices.

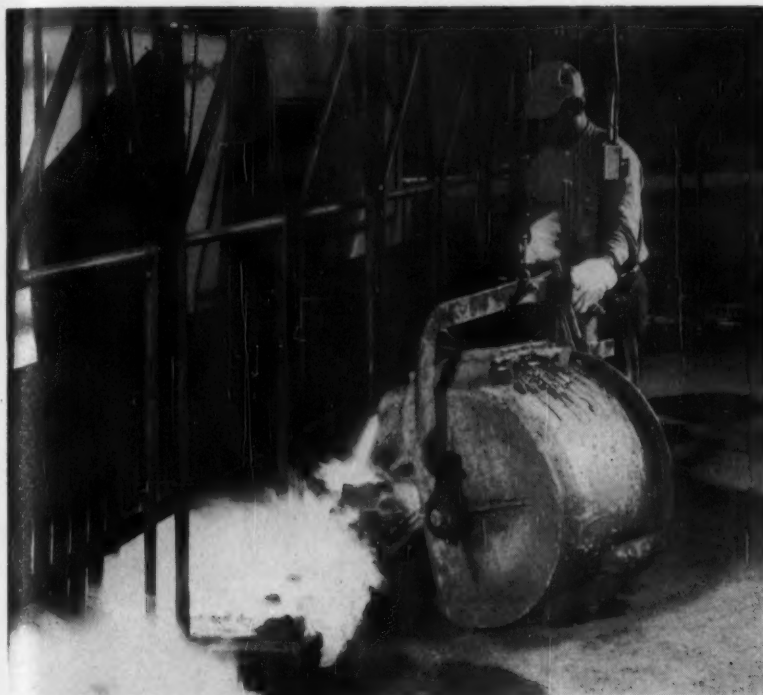
Another factor contributing to malleable foundrymen's optimism is the new advertising program of the Malleable Founders' Society. One thought is that 1959 may be too early to show really positive results, but they are looked for by 1960.

Data for backlogs included in this report are weighted on the basis of employment in responding companies.



Of a Big Sales Gain

SIC 3322 Percent of Replies by Plant Size:		
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 249	44 Pct	50 Pct
250 and over	56 Pct	50 Pct



Central Foundry Div., General Motors

What Industry Executives say:

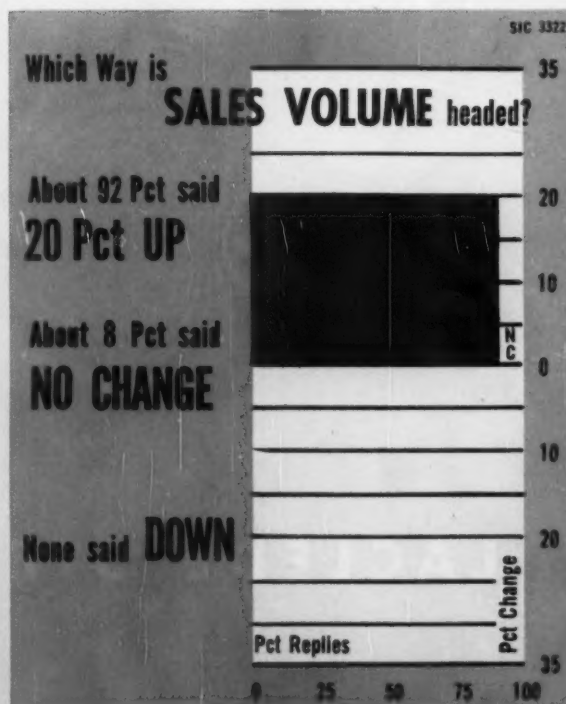
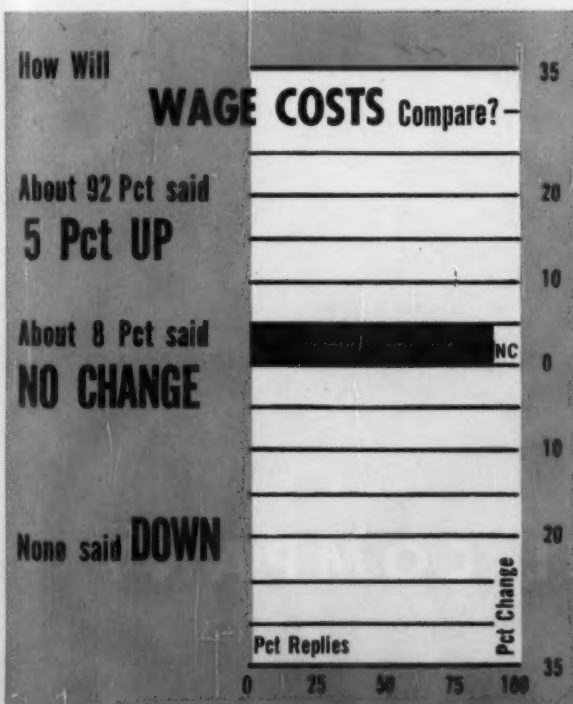
Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Shell moulding."

"More improvement in production equipment. Strive for lower man hours."

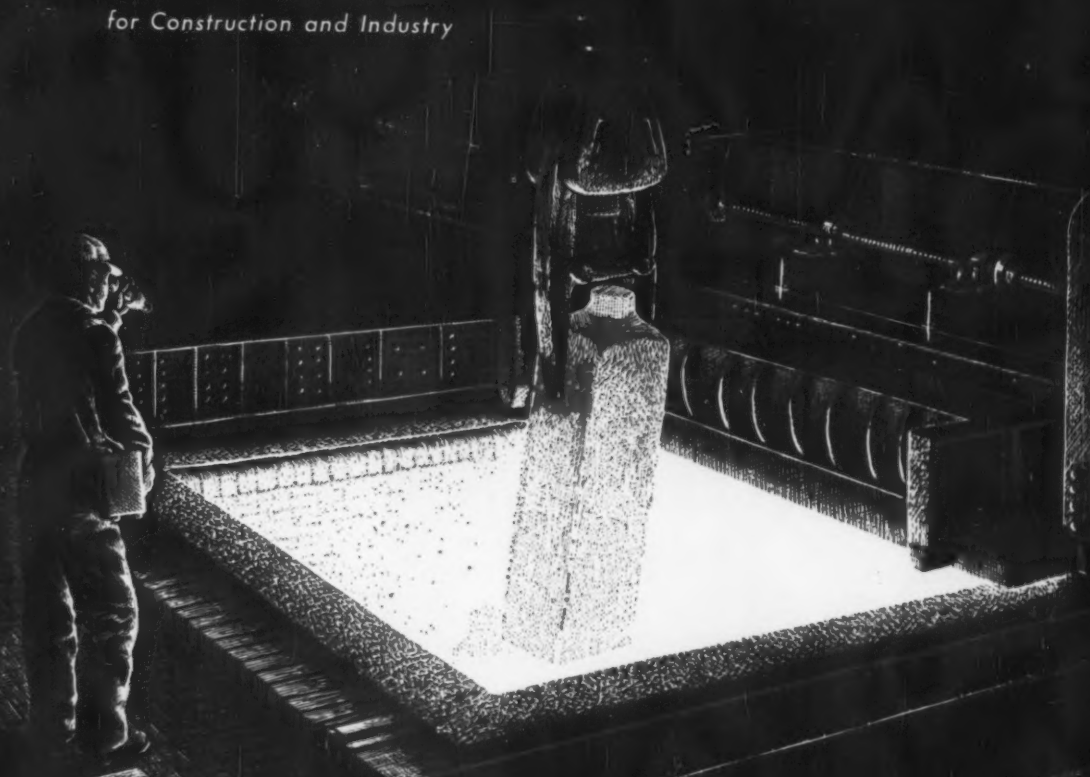
"I feel the biggest marketing problem in the coming year is for malleable iron foundries to regain current markets from conversions and to win their full share of new

Continued





Producers of Quality Steel
for Construction and Industry



LACLEDE STEEL COMPANY

markets. This can only be done by forceful education, advertising, and sales contacts of the men who actually control the specification of materials purchased." **H. L. Kirsh, President, Kirsh Foundry, Inc., Beaver Dam, Wisc.**

"New car sales."

"The greatest marketing problem is apparently the ability to absorb continually increasing costs, since our equipment is the most efficient in our industry as of the present time. Our further improvements in efficiency are promising."

"Diversification and conversion to malleable iron from competitive materials." **T. Tower, Secretary, Westmoreland Malleable Iron Co., Westmoreland, N. Y.**

"Improved product, doing more sales development (conversions), producing casting in such a manner so as to reduce or eliminate machining by customer, being sure to maintain promised delivery schedules." **H. P. Blumenauer, President, Albany Castings Co., Inc., Voorheesville, N. Y.**

"Advertising program of Malleable Castings Council." **W. S. Roby, President, Peoria Malleable Castings Co., Peoria, Illinois**

"Continued further acceptance of nodular or ductile iron. This is now 10 pct of our production, will be 20 pct in 1959."

"Aggressive selling and a better marketing program have been lacking in the industry for a long period." **E. C. Brust, President, Eastern Malleable Iron Works, Naugatuck, Conn.**

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., The IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

PACKAGED AIR HEATERS by THERMAL

Extreme compactness, high efficiency and versatility of operation are the chief characteristics of the THERMAL Type CA direct fired air heater. Designed around the high velocity THERMAL burner, it normally requires no refractory, since combustion is limited almost entirely to the burner itself. Adding to its versatility, the CA air heater performs equally well on gas, oil or combination firing and can be adapted to all pressure levels.

Type CA air heaters are most frequently sold as "packaged" units complete with all necessary safety and control apparatus. These units will provide outputs ranging from 200,000 BTU/hr to better than 30,000,000 BTU/hr and at temperatures from 300F to 1500F or higher.

Type

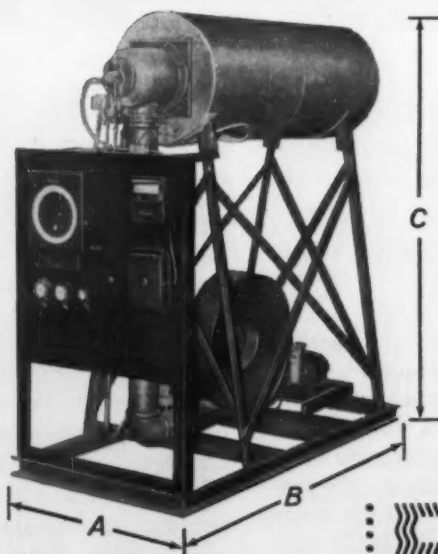


direct
fired

TYPICAL SIZES . . .

Listed below are the overall dimensions of a few of the dozens of output, temperature, and flow combinations possible in these heaters. Figures are for atmospheric pressure units. Higher pressure heaters would be smaller.

BTU/hr	AIR FLOW scfm	TEMP. IN °F	TEMP. OUT °F	A ft.	B ft.	C ft.
800,000	1,000	60	750 F	2½	4½	4
2,500,000	5,000	60	500 F	4	7	6
4,000,000	16,000	700	900 F	7	11	8
10,000,000	8,500	60	1,000 F	5½	10	8
15,000,000	10,000	60	1,200 F	6	12	8



Write for Bulletin #112

THERMAL

Thermal Research & Engineering Corp.

CONSHOHOCKEN • PENNSYLVANIA

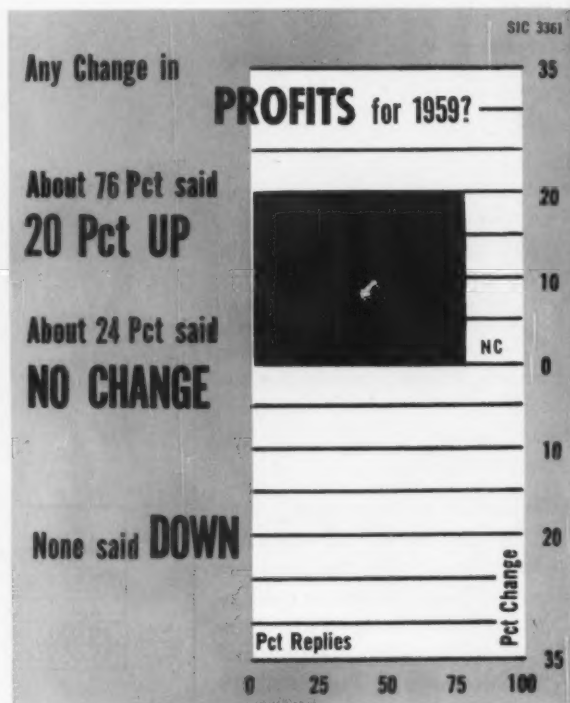
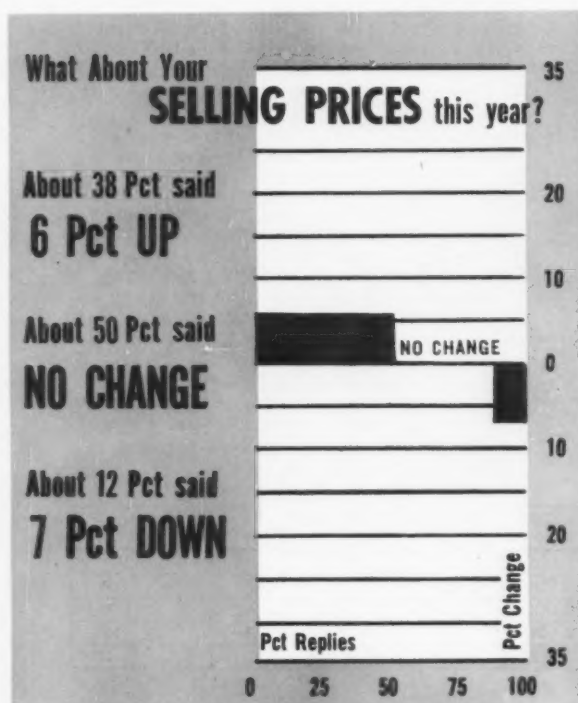
REPRESENTATIVES IN PRINCIPAL CITIES



Other Thermal Products
& Services:

- Gas, Oil & Combination Burners
- Heat Exchangers
- Gas Generators
- Submerged Combustion
- Combustion & Heat Transfer Equipment

Nonferrous Foundrymen Push



Three out of four expect a nice sales gain this year, with a third expecting to raise prices about 6 pct.

However, half say they'll hold the line on prices.

■ New alloys and new molding methods are the trump cards which many nonferrous foundry executives will play this year in their drive for better sales and profit ratios.

Most of the industry is quite optimistic. Some 73 pct of the executives who replied to this IRON AGE survey expect to see sales up by an average of 16 pct. One predicted a sharp drop in sales and profits, a reply which is not included in the accompanying charts because it would distort the picture. The others see no change in sales volume.

More optimistic than metalwork-

ing in general, 76 pct of nonferrous foundrymen look for an average 20 pct increase in profits.

How will they do it? Shell molding, closer tolerances, high strength aluminum alloys, permanent mold magnesium castings in both aluminum-zinc and high temperature thorium alloys are some of the trends you can expect this year.

The trend toward wider automotive use of aluminum may not be entirely a blessing, said one executive, if it brings more iron founders into the aluminum field. Like ferrous foundries, a number of marginal aluminum foundries have fallen by the wayside. Often this was because of lack of cost knowledge or unwillingness to face cost facts; sometimes it was an equipment or a marketing problem. In any event, it took some of the price-cutting

pressure off those who remain.

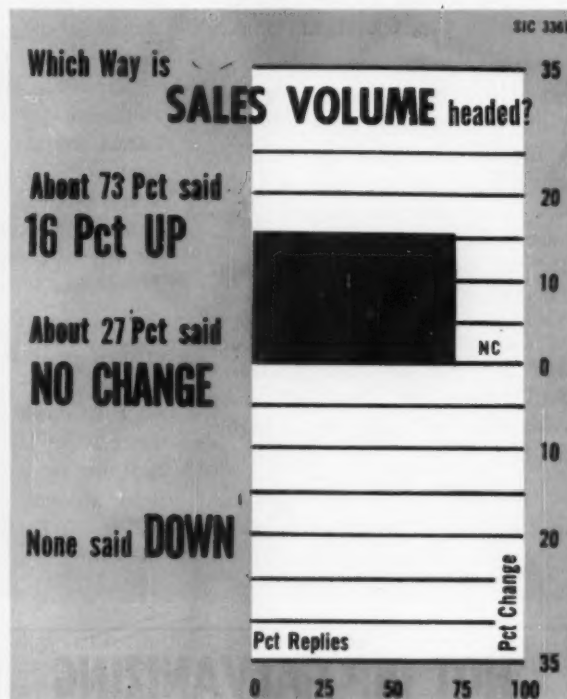
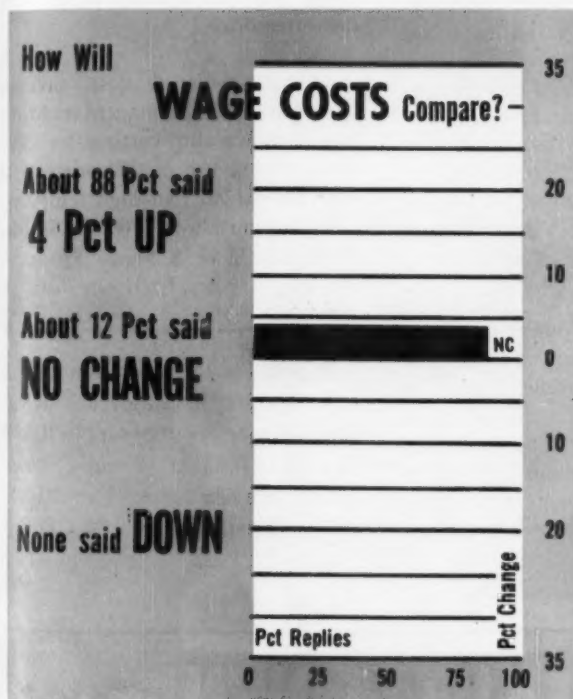
In many cases, modernization has been the answer to the profits squeeze. This has been coupled with new methods and products and an awareness of the marketing concept in the more progressive companies.

Of the four foundry fields covered in this survey, the nonferrous shops have by far the best backlogs, averaging 54 days production going into 1959. While this is 12 below the figure at the end of 1957, it is 10 days larger than the steel foundries and about double those of the gray iron and malleable foundries. Backlog data, like those for inventories, are weighted on the basis of the number of plant workers in responding companies.

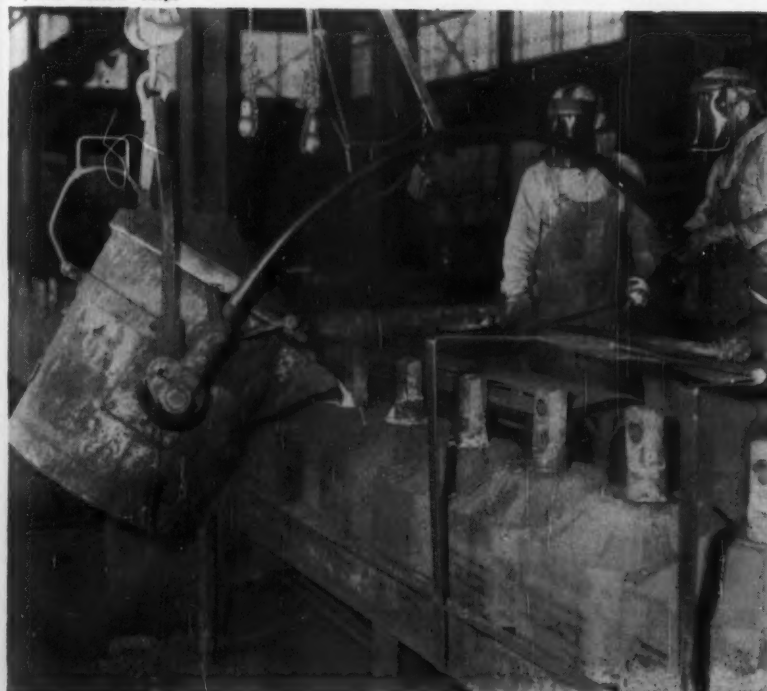
Details on backlogs and inventories are shown in the charts at the front of this section.

New Alloys, Methods

SIC 3361 Percent of Replies by Plant Size:		
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	—	—
100 to 249	61 Pct	79 Pct
250 and over	39 Pct	21 Pct



Reynolds Metals Corp.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"In the commerical nonferrous foundry industry we face an increasing threat from captive customer operations. We must determine the production level at which we can earn the most consistent profit and adjust our markets to support this continuing level.

"This can involve cultivating closer market areas by increased

Continued

Nonferrous Castings, continued

quality, production scheduling and service while maintaining present price levels on a more profitable basis." **B. A. Lawson, Vice President Marketing**, Monarch Aluminum Mfg. Co., Cleveland, Ohio.

"Rising costs versus customer demand for lower prices. Larger foundries who know their costs have a difficult time, because to many small foundries with less 'cost consciousness' give in to buyer pressure." **E. T. Kartin, President**, Reliable Castings Corp., Cincinnati, Ohio.

"Greater use of aluminum in cars, and new uses in other products." **S. D. Den Uyl, President**, Bohn Aluminum & Brass Corp., Detroit, Mich.

"We believe that new advances in shell-type investment casting techniques will greatly broaden the

fields of application and should lower user costs." **J. H. Morison, President**, Hitchiner Mfg. Co., Inc., New Hampshire.

"We are a 100 pct aluminum foundry. Severe competition is driving marginal foundries out of business which under normal conditions should eventually result in better prices.

"However, the trend from iron to aluminum for automotive use will attract some iron foundries into aluminum — resulting again in severe profitless competition." **L. A. Paukrat, Executive Vice President**, Quality Aluminum Casting Co., Waukesha, Wisc.

"Improved equipment and increased capital expenditures will reduce manufacturing costs to improve profit ratios. In a fiercely competitive industry, upgrading of facilities on a continuing program is an absolute necessity for survival." **R. R. Dreibus, President**, Harvill Corp., Los Angeles, Calif.

"Imports of finished goods." **Oscar Zielke, President and General Manager**, Product Engineering Mfg. Corp., Bridgman, Mich.

"The development of high strength aluminum alloys should improve sales for jobbing permanent mold foundries.

"The substantial cost savings demonstrated in permanent molding of magnesium alloy castings for missiles increase use of this process in both the Al-Zn and high temperature thorium alloys." **W. C. Smith, President**, H & S Metal Products Co., Los Angeles, Calif.

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., The IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

HOT DIP GALVANIZING

JOSEPH P. CATTIE & BROTHERS, INC.

2520 East Hager St.

Phone: Re 9-8911

Phila. 25, Pa.

DYKEM STEEL BLUE

Stops Losses
making Dies and
Templates



Popular package is 8-oz. can fitted with Bakelite cap holding soft-hair brush for applying right at bench; metal surface ready for layout in a few minutes. The dark blue background makes the scribed lines show up in sharp relief, prevents metal glare. Increases efficiency and accuracy.

Write for sample on company letterhead

THE DYKEM COMPANY
2303G North 11th St. • St. Louis 6, Mo.

CUT SCRAPER TIME

END NIGHT CLEANUP & MORNING REBLUING



DYKEM HI-SPOT BLUE No. 107 is used to locate high spots when scraping bearing surfaces. As it does not dry, it remains in condition on work indefinitely, saving scraper's time. Intensely blue, smooth paste spreads thin, transfers clearly. No grit; noninjurious to metal. Uniform. Available in collapsible tubes of three sizes. Order from your supplier. Write for free sample tube on company letterhead.

THE DYKEM CO., 2303G NORTH 11TH ST., ST. LOUIS 6, MO.

KUTZTOWN Skill

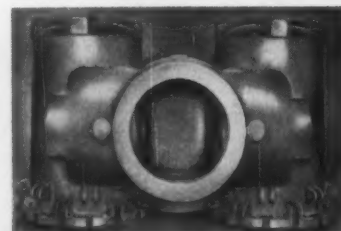
creates a 24" DUPLEX STRAINER BODY

This large casting was dry sand molded, using Class 30 cast iron with 1% Nickel added.

Dimensions

Barrels
31 1/4" I.D. 33 1/4" O.D.
56 1/2" high.
Lower Barrel Flanges
41" O.D. 30" I.D.
with cast lugs,
2" thick
Side Outlet Flanges
32" O.D. 24" I.D.
1 1/8" thick.

Weight — 9260 lbs.



For many years Kutztown foundrymen have been molding medium to large castings in dry sand, molding them perfectly in large pits. Because they are so massive they are more efficiently and economically made in pits where there is no necessity for having large, cumbersome iron flasks. However, whatever method of casting is used—dry sand, loam or machine molding—you can be certain that the "sculptors" of Kutztown are skilled in the practical art of making high quality castings.

We'll be happy to place your name on our mailing list to receive regular issues of the "Kutztown REVIEW."

KUTZTOWN FOUNDRY & MACHINE CORP.
KUTZTOWN, PENNSYLVANIA

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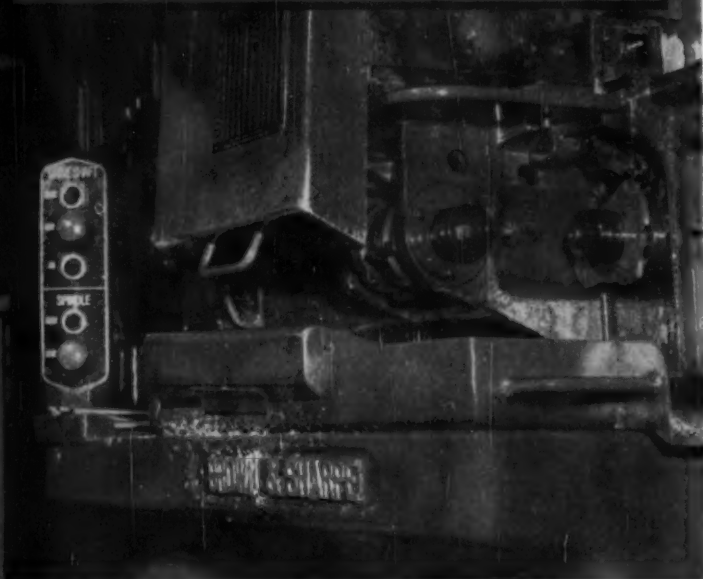
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NOW...time proved by the toughest production tests

... the new BROWN & SHARPE Automatics



No. 00

takes stock to 1/2" diam.

Spindle speed range 7200 to 34 rpm

Turns any length to 1"

... with optional equipment, to 1 1/2"

Ratios, high to low speeds,

2.3:1 to 16:1



No. 2 — in THREE SIZES

Take stock to 3/4" dia. 1 1/4" dia. 1 1/2" dia.

Spindle speed range 5050 to 25 rpm 3500 to 17 rpm 2450 to 17 rpm

Turn any length to 3 1/2"

Ratios, high to low speeds, 2.2:1 to 15:1

Day by day, more in-plant records prove the production possibilities of the new No. 00 and No. 2 Brown & Sharpe Automatic Screw Machines.

"33% higher production . . ."

One manufacturer boosted production from 257 to 342 pieces per hour. The 33% gain includes a reduction in drilling time of 15%, using the improved deep drilling arrangement.

"Save up to 92% in production time"

Another manufacturer, by eliminating secondary operations necessary with old machines, saves up to 92% in production time, and meets the highest standards for surface quality.

"tolerances held to .0005" — rejects to 1%"

From every aspect — accuracy, efficiency, economy — the new Automatics are *delivering* the advantages Brown & Sharpe designed into them.

Figure the comparable savings you can make in your operations with the extra speed, precision, adaptability — the easier setups and extended tool life. You'll see why so many buyers say, "They pay for themselves in record time." For complete details, write: Brown & Sharpe Mfg. Co., Providence 1, R. I.

Brown & Sharpe

PROGRESS IN PRECISION FOR OVER 125 YEARS

MACHINE TOOL DIVISION

MILLING • GRINDING • SCREW MACHINES MACHINE TOOL ACCESSORIES



Pump Makers Gear Hopes to

Chemical industry prospects add to those for all types of construction to offset lack of zip in industry expansion.

It's 50-50 on higher prices but big sales gain is seen.

■ That segment of the pump and compressor industry which is geared to construction of roads, housing, school and commercial buildings is in a fairly cheerful frame of mind. Those who sell to industry are not quite as optimistic. But several industrial areas look promising: Chemical processing and petroleum refining should be up this year. Shipbuilding should hold level.

And there is a heavy backlog of water, sewage and industrial waste treating facilities—the former to catch up with population gains, the latter to comply with stream

pollution ordinances.

Going into '59, makers of pumps and compressors report a backlog only 4 pct below that at the beginning of the year—75 days now vs. 79 days a year ago. But 64 pct of respondents, weighted by plant size, told The IRON AGE that they have smaller component inventories than they had a year ago. And their raw materials stocks have been cut even further.

Chances of a price increase in this field are about 50-50, with half the reporting executives expecting to raise prices an average of 5 pct, the rest holding steady.

Sales volume, which is off considerably from the '57 level should go up, say 83 pct of respondents. Average gain predicted: 18 pct. None see a decline but 17 pct expect their volume to hold at the 1958 level.

Nearly 60 pct hope for profits to be higher, averaging 18 pct. Some 16 pct fear a 12 pct drop, but one in four expects no change this year.

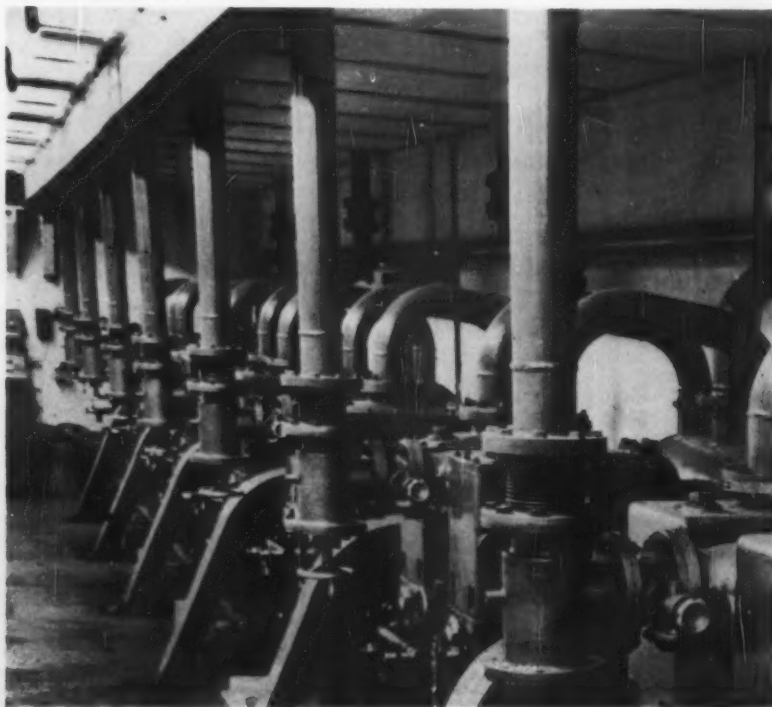
In this field, as in the rest of metalworking, another 5 pct increase in wage costs is feared by nine out of ten respondents.

Research and development have been pushed by a number of pump and compressor makers during the past year. Application of fluid power to automation is promising.

You can expect market planning and more intensive sales efforts in the industrial field, according to reports from several manufacturers.

The box at the upper right, "Percent of Replies by Plant Size", shows how plant size of responding companies compares with the plant-size pattern for this industrial group as a whole.

National Research Corp.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Foreign competition." A. M. Ruthman, Vice President, Ruthman Machinery Co., Cincinnati, Ohio.

"Pent up backlog of need for water, sewage treatment, and industrial waste treatment facilities to reduce steam pollution of which there is a growing public concern, and also to handle burgeoning population increase." J. L. Ledeen,

Continued

SIC 3561

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	38 Pct	37 Pct
100 to 249	37 Pct	51 Pct
250 and over	25 Pct	12 Pct

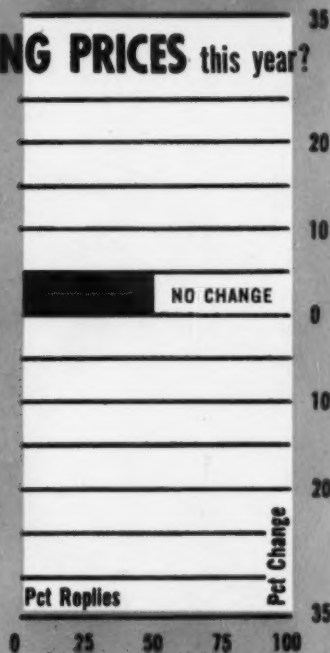
New Construction

What About Your
SELLING PRICES this year?

About 49 Pct said
5 Pct UP

About 51 Pct said
NO CHANGE

None said **DOWN**



Any Change in
PROFITS for 1959?

About 59 Pct said
18 Pct UP

About 25 Pct said
NO CHANGE

About 16 Pct said
12 Pct DOWN

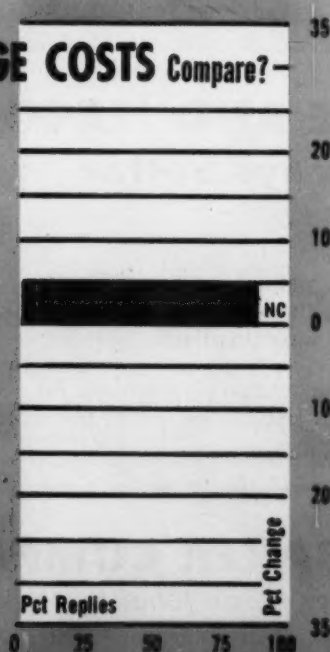


How Will
WAGE COSTS Compare?

About 89 Pct said
5 Pct UP

About 11 Pct said
NO CHANGE

None said **DOWN**



Which Way is
SALES VOLUME headed?

About 83 Pct said
14 Pct UP

About 17 Pct said
NO CHANGE

None said **DOWN**

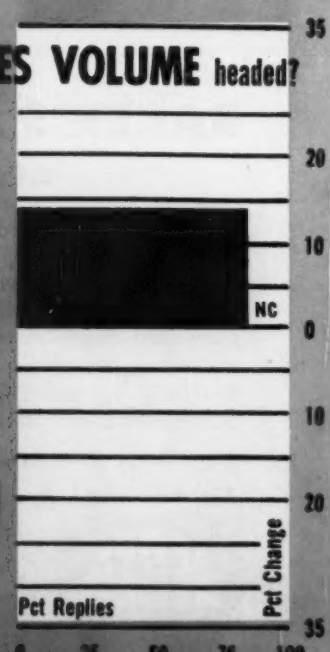




Photo courtesy of Jones & Laughlin Steel Corporation

BAKER'S MAGDOLITE AND JEBCOLITE are always 5 ways better

Continued research and development throughout the years, plus The J. E. Baker Company's precisely controlled manufacturing methods, have resulted in the superior, properly burned, grain-sized Magdolite and Jebcolite particles which help provide:

More uniform ingots—increased ingot production—increased furnace efficiency—lower

refractory costs—less defective production material.

Magdolite and Jebcolite* are the *original* dead-burned dolomites that offer better composition, preparation, strength, economy and quality. Don't say "dolomite." Save dollars. Specify Baker's Magdolite for open hearth and Jebcolite for electric furnace use.

**Jebcolite has the same superior chemical, physical and mineralogical characteristics as Magdolite and differs only in grain size which is designed specifically for electric furnace application.*



THE J. E. BAKER COMPANY

YORK, PENNSYLVANIA

PLANTS: BILLMEYER, YORK, PENNSYLVANIA — MILLERSVILLE, OHIO

General Manager, Ralph B. Carter
Co., Hackensack, N. J.

"New products for new markets."
N. Shultz, Vice President, Racine
Hydraulics & Machinery Inc., Ra-
cine, Wisc.

"Larger takeover of missile
spending may hold down some
spending that would otherwise go to
aircraft." **E. N. Freeman**, Freeman
Co., Yankton, S. D.

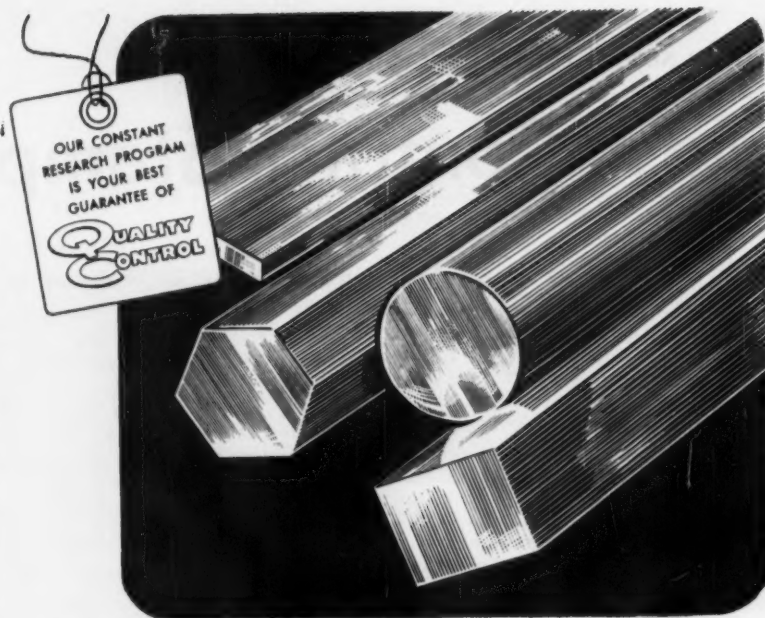
"Due to the fast-moving space
technological race, it will be very
hard for our industry to maintain
the semblance of a thorough organ-
ized approach to new products and
general marketing areas. The in-
crease in government spending both
as prime contractors and subcon-
tractors will place emphasis to a
great extent on price—when it
should be placed upon technical
know-how and ability. It is also
possible that certain types of con-
tracts will be let due to political ex-
pediency rather than to vendor abil-
ity." **H. D. Stone, Sales Manager**,
N R C Equipment Corp., Newton,
Mass.

"Extreme competition, extended
use of plastics, better packaging,
tendency on part of manufacturer to
make parts he formerly purchased."
W. F. Deming, President, Deming
Co., Salem, Ohio.

"Most important needs: Resump-
tion of plant expansion program in
chemical process industries. Con-
tinuation of high level in ship-build-
ing." **D. B. Gilman, President**, War-
ren Steam Pump Co., Inc., Warren,
Mass.

"Road building and inflation."
F. P. Szasz, General Manager, Gen-
eral Hydraulics, Inc., Bucyrus,
Ohio.

"Shipbuilding, air conditioning
and commercial building, schools,
hospitals, office buildings." **F. S.
Main, General Manager**, Aurora
Pump Co., Aurora, Ill.



Patronize your local steel service center

for "On the Spot" Deliveries of

WYCKOFF

cold finished steels

Their large, diversified stocks insure fast,
dependable shipments of the grades, sizes
and quantities you currently require.

For positive uniformity, ultimate machin-
ability, superior finish and longer tool life—
be sure of these production advantages by
specifying **WYCKOFF**.



WYCKOFF STEEL COMPANY

GENERAL OFFICES:
Gateway Center, Pittsburgh 30, Pa.

Branch Offices in Principal Cities

Works: Ambridge, Pa., Chicago, Ill., Newark, N.J., Putnam, Conn.

WYCKOFF STEEL PRODUCTS • Carbon, Alloy and Lead Steels • Turned and Polished Shafting
• Turned and Ground Shafting • Large Squares • Wide Flats up to 12 3/4" x 2 1/4" and
14" x 1 1/4" • All types of Furnace Treated Steels including Carbon Corroded Steels

Most Contract Stampers Expect

Two out of three expect to raise prices this year. While three out of four see better sales, only half predict higher profits.

With 34-day backlogs, most have cut inventories.

■ By and large, contract stampers expect just about the same increase in sales this year as metalworking in general. But their backlogs going into 1959 are generally lower than those in most other segments of metalworking.

While the Standard Industrial Classification (SIC 3461 "Metal Stampings") includes captive shops, The IRON AGE surveyed contract stampers only so as to exclude companies where contract stamping may be only a small part of the total operation.

Executives replying to the survey estimated that their order backlogs at year's end would be 34 days, against a figure of 40 days at the end of 1957.

Inventories of raw materials (steel, aluminum, brass, etc.) are below those of a year ago in 65 pct of plants on a weighted basis. Some 23 pct reported them about the same and 12 pct are higher than they were a year ago. Weighting is on the basis of plant employment so that a large inventory in a small plant will not distort the picture. This weighting is applied to backlogs too, but replies on sales, profits, etc., are unweighted individual replies.

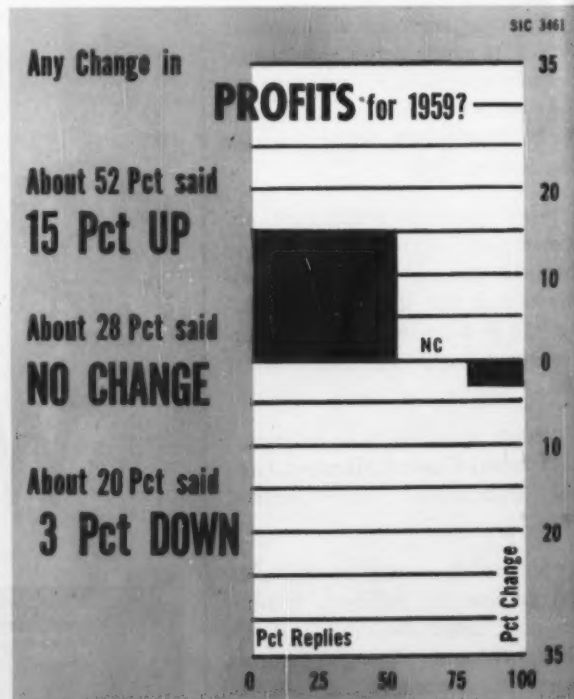
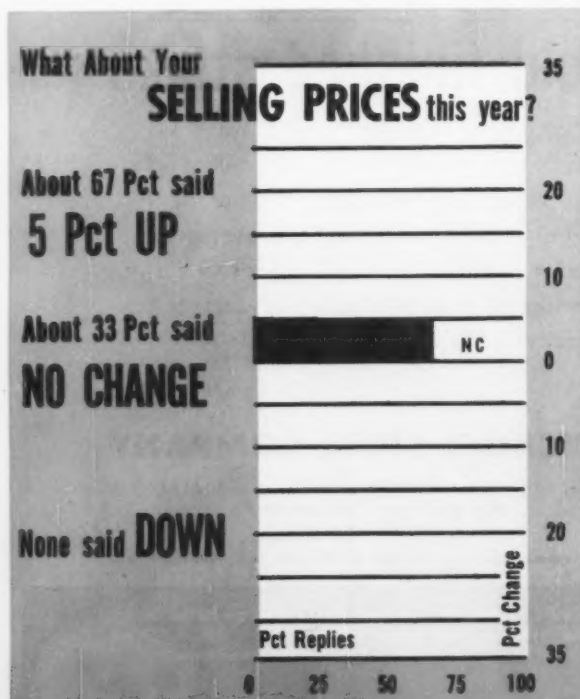
You can expect about two-thirds of stampers to go after a 5 pct price increase although the other third expect to hold at current levels. How this will be achieved with nine

out of ten expecting further wage pressure is a poser. Yet many say prices are too low now.

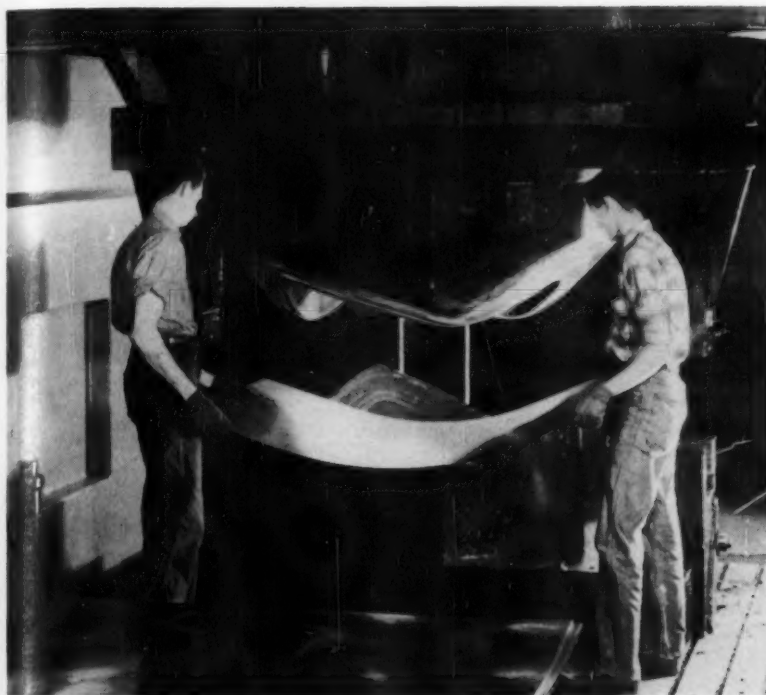
For one thing, inflation is making automation and new equipment hard to achieve in this field. Press builders have been acutely aware of this during the past year.

It may explain why stampers don't expect to show the profit improvement of metalworking in general, where 60 pct of respondents are looking for an average profit increase of 23 pct. For contract stampers the comparable figures are 52 pct saying "Up about 15 pct" on the average. And 20 pct fear profits may dip another 3 pct.

Here, as elsewhere, higher sales volume and a squeeze on profits seem to be the expected pattern. For 72 pct of the stamping executives expect their sales to average 16 pct better than they did last year.



Better Sales in '59



Chrysler Corp.

SIC 3461

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	56 Pct	68 Pct
100 to 249	28 Pct	16 Pct
250 to 499	7 Pct	12 Pct
500 and over	3 Pct	4 Pct

What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Keeping up with inflation is our greatest problem. Makes it very hard to replace old equipment at current prices." **C. C. Higgins, President & Treasurer, Worcester Pressed Steel Co., Worcester, Mass.**

"Technically: 'Cold Extrusion.' Marketing: 'Make or Buy.'" **C. C. Caditz, President, Northern Metal Products Co., Franklin Park, Ill.**

"Personal contact selling."

How Will WAGE COSTS Compare?

About 92 Pct said
5 Pct UP

About 8 Pct said
NO CHANGE

None said
DOWN



Which Way is SALES VOLUME headed?

About 72 Pct said
16 Pct UP

About 20 Pct said
NO CHANGE

About 8 Pct said
30 Pct DOWN



A Complete Line of Lindberg



GTV-60 Vertical Tube Atmosphere Furnace: This furnace is ideal for numerous pilot plant or laboratory applications requiring protective atmosphere, cooling chamber and accurate stepless temperature control up to 2750° F.

Write for Bulletin T-1088

3 KW High Frequency Induction Unit: This unit has been designed for high frequency induction heating of both ferrous and non-ferrous materials, to any desired temperature up to 4200° F.

Write for Bulletin T-1093



Wherever heat is applied to industry there has long been need for economical experimentation beyond laboratory research and before actual production. Lindberg has now filled this need with this complete line of furnaces for pilot plant use. These furnaces provide, at moderate cost, means for developing techniques and methods for industrial heating applications under actual production standards ordinarily impossible to get with research laboratory equipment. Beyond this, they are generally usable for small

RB-45 Atmosphere Box Furnace: This rugged, compact furnace is designed for continuous operation at all heat levels up to 2000° F. It provides a clear working area 8" wide by 13" deep by 5" high.

Write for Bulletin T-1096



GT-24 Atmosphere Tube Unit: This unit may be used for a wide variety of heat treating applications requiring temperature ranges up to 2200° F. Maximum muffle size 4" ID and furnace chamber is 9" long.

Write for Bulletin T-1091

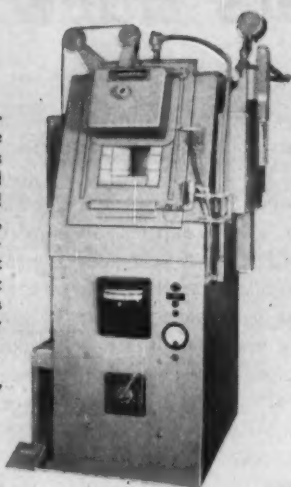


LINDBERG heat for industry

Furnaces for Pilot Plant Use

GB-50 Atmosphere Box Furnace: This general purpose heat treating furnace is designed for heavy and continuous duty at all heat levels up to 2500° F., but is capable of operation at 2700° F. for short or intermittent runs. It has a clear working area 6" wide by 12" deep by 5" high.

Write for Bulletin T-1087

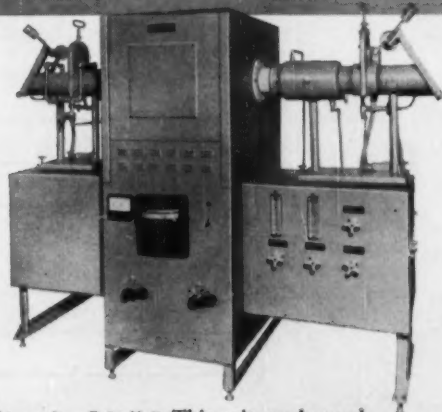


RB-40 and RB-41 Box Furnaces: These non-atmosphere box furnaces provide precise temperature control up to 2000° F. Available in two chamber sizes: (RB-40) 4" by 4" by 10½", (RB-41) 5½" by 7½" by 14¼".

Write for Bulletin T-1086

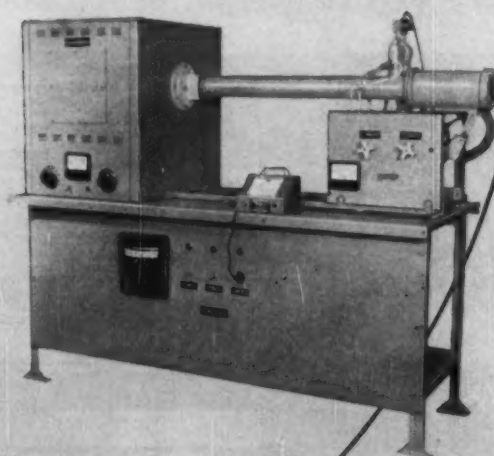


production runs of small parts. Lindberg's long experience in the application of heat to industry has made possible the development of this useful pilot plant line. Lindberg's staff of engineers and technicians is also available to assist you in applying these furnaces, or any type of Lindberg equipment to your specific industrial heating problems. Consult your nearest Lindberg Field Representative (see your classified phone book) or write us direct for detailed information and descriptive bulletins.



GT-34 Atmosphere Tube Unit: This unit may be used for a wide variety of heat treating applications requiring temperature ranges up to 2750° F. Chamber 10" long, maximum tube size 4" ID. Available as floor or bench model.

Write for Bulletin T-1090



GT-25 Vacuum Retort Unit: This unit makes it possible to investigate vacuum metallurgy with a minimum investment. Provides temperatures up to 2150° F. with vacuum to 0.5 micron.

Write for Bulletin T-1085

Pilot Plant Equipment Division

LINDBERG ENGINEERING COMPANY 2452 West Hubbard Street, Chicago 12, Illinois

Steel Forgers Buck Trend to

Qualified optimism is the rule in the steel forging industry. Most hope for better sales and profits.

It's a tough fight. Biggest problem is trend of major users to do their own steel forging.

■ During the past year, shipments of steel forgings dropped off as much as 30 pct from year-ago comparisons.

But in the fourth quarter, business picked up to respectable levels. On the strength of this comeback, and generally optimistic predictions for their major customers, steel forgers are confident of a better year this year.

Executives in this group of metalworking are generally optimistic, but in a modest way. Although 83 pct expect a sales comeback this

year, the average predicted improvement is an unspectacular 17 pct gain.

In profits, 76 pct expect improvement, and this group expects an upturn of about 18 pct. A year ago, with the handwriting on the wall, 58 pct expected a decrease in their profits. Looking back over the disappointing recession, this group had the dubious satisfaction of seeing their gloomy predictions fulfilled.

And a hard core of pessimists lingers. Although three-quarters of the group look for greater earnings, and 19 pct expect no change, 5 pct expect earnings to drop over 30 pct!

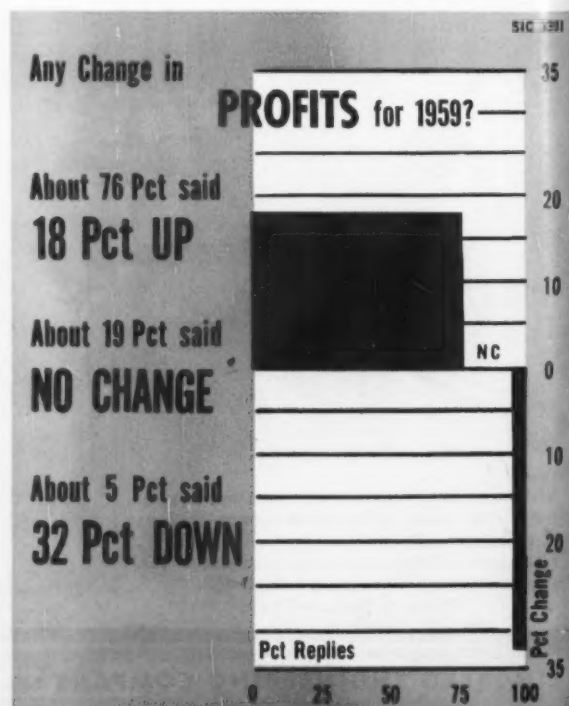
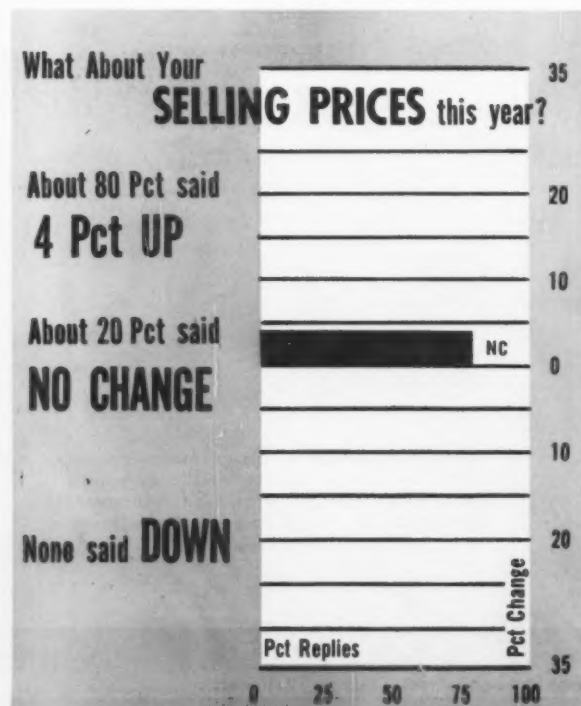
The reason for this qualified optimism probably lingers in the fear that some of the markets are being lost, either to captive shops or to other processes. In regard to the latter, forward-looking companies are determined to take advantage

of new processes and advancements in metallurgy to prevent inroads and also to go after new markets.

Forgers view the auto industry with misgivings. It has been, and probably still is, their biggest market. But while they are looking forward to a better automotive year, some acknowledge the unpleasant fact that automakers are "pulling work into their own plants, which was formerly done by suppliers."

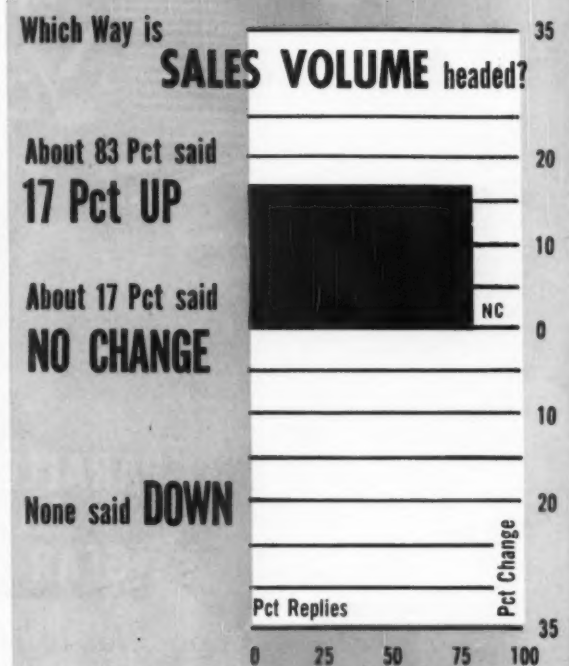
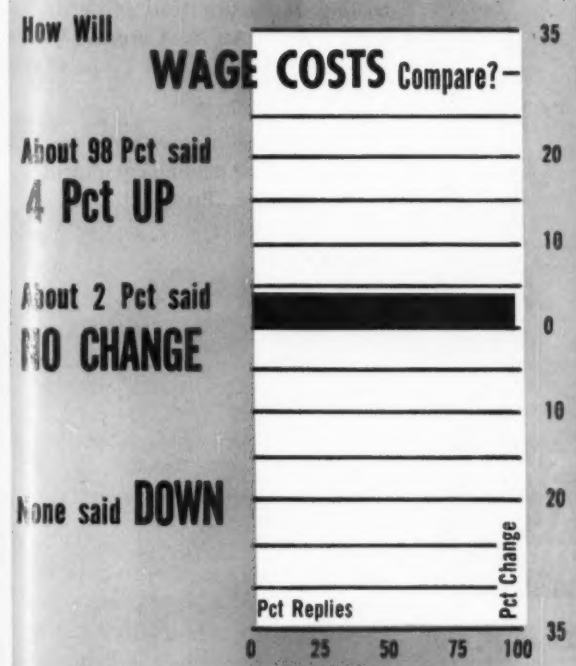
With virtually every steel forger reluctantly forecasting a small wage increase, about 4 pct, the price trend is up, about the same amount. A minority, 20 pct, believe they can hold prices.

Steel foundries have cut their inventories, for the most part, with 66 pct reporting lower stocks of raw materials and 52 pct holding lower stocks of finished goods than a year ago.

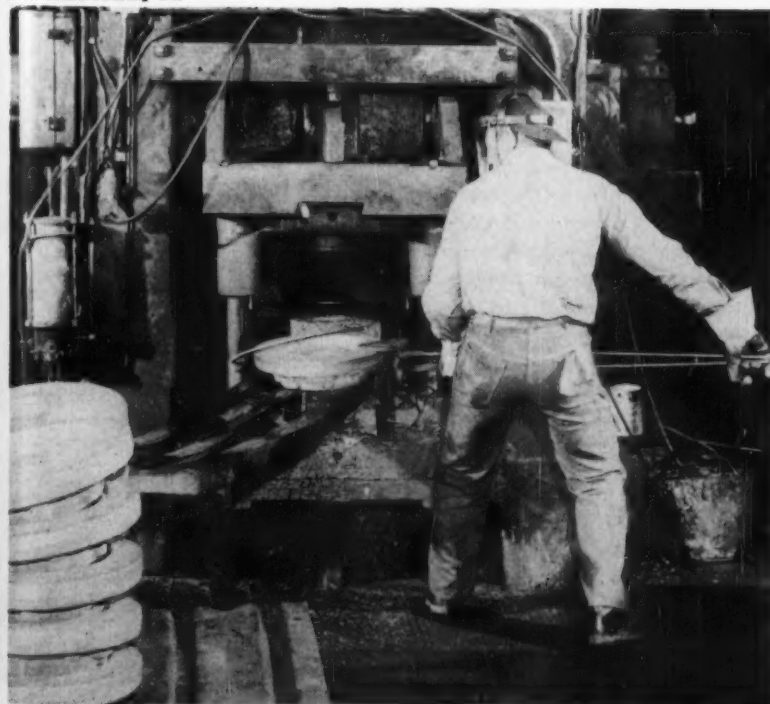


to Captive Shops

SIC 3391 Percent of Replies by Plant Size:		
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	31 Pct	36 Pct
100 to 249	40 Pct	40 Pct
250 and over	29 Pct	24 Pct



Eaton Manufacturing Co.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Vacuum pouring." **A. O. Schaefer, President, Pencoyd Steel & Forge Corp., Manayunk, Phila., Pa.**

"Present signs indicate the industry is hastening toward full recovery from the recent recession. If industry, labor and the federal government can slow down the climb of inflation, 1959 should prove a solid

Continued

FOR BIG POWER use **Maxi-Power**



1. Heavy duty, reinforced design housing for permanent alignment, rigid shaft support.

2. One mesh per reduction—fewer moving parts.

3. Broad faced helical gearing—high quality, accurately hobbled for greatest strength, durability. Uniform tooth deflection under load... no uneven wear.

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- ★ Single, Double, Triple Reductions
- ★ Standard Ratios from 2.08 to 1 up to 360 to 1
- ★ 9 Shaft Arrangements
- ★ Available With Fabricated Steel Housing

There's more capacity, greater stamina and longer service life built into Foote Bros. Maxi-Power Parallel Shaft Drives. Simple, balanced design, fewer moving parts, heavy duty construction, efficient lubrication and conservative ratings make Maxi-Power drives the logical choice for critical applications and severest operating conditions.

You can depend on Maxi-Power Drives to produce maximum performance with minimum attention because they're built for just that kind of service.



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Better Power Transmission Through Better Gears

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4565 SOUTH WESTERN BOULEVARD • CHICAGO 9, ILLINOIS

Steel Forgings, continued

and substantial year in both volume and profits." **G. R. Walker, President**, Walker Forge Co., Racine, Wisc.

"Our industry should start to reserve a greater portion of initial tooling charges instead of 'giving' away dies." **A. N. Cornell, Vice President Sales**, Cornell Forge Co., Chicago 38, Ill.

"Improvements needed in both mechanical and heating equipment." **E. J. Carlson, President**, Indiana Forge Machine Co., East Chicago, Ind.

"Sale of 1959 model cars." **B. C. Cox, President and General Manager**, Melling Forging Co., Lansing 3, Mich.

"Testing and research of high temperature alloy steels." **A. B. Smith, President**, McInnes Steel Co., Corry, Pa.

"Our greatest need is to have the mills produce a more uniformly clean ingot. Nondestructive testing (specifically ultrasonic) is being required more and more daily and specifications are being written tighter and tighter." **L. Dellinger, General Manager**, Earl M. Jorgensen Co., Forge Div., Los Angeles 54, Calif.



"He's definitely shop foreman material, J.B. . . . I like the way he butters me up."

ONE YALE TRUCK DOES THREE JOBS ECONOMICALLY

K-46 equally efficient in warehousing, on loading ramp, for mounting and dismounting operations

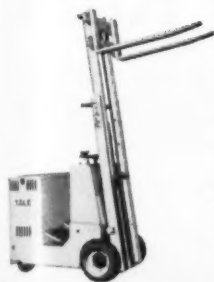
If your requirements call for a one-truck fleet, the versatile Yale K-46 is the truck for you!

Three features give this economical Yale truck an extraordinary degree of usefulness. *Compactness* makes it a good narrow-aisle truck. *Maneuverability* makes it the perfect truck for loading and unloading on the delivery ramp. *Standup cockpit* permits easy, fast mounting and dismounting... gives the driver a clearer view for loading operations and aisle movement.

The K-46 is the ideal truck for profitable short

cycle operations. Compact as it is, this economical truck has *all* the features of the large Yale electric trucks. Exclusive Magnetic Cam-O-Tactor for controlled acceleration and smooth travel—rugged durability—low-cost operation—dead-man control and other safety features. Capacities, 2,000 and 3,000 lbs.

For information about this stand-up electric truck, a cost-cutter in Yale's line of electric trucks (capacities 1,000 to 200,000 lbs.), call your Yale representative, or write for brochure #5112. The Yale & Towne Manufacturing Co., Yale Materials Handling Division, Philadelphia 15, Pennsylvania, Dept. KT 1-V.



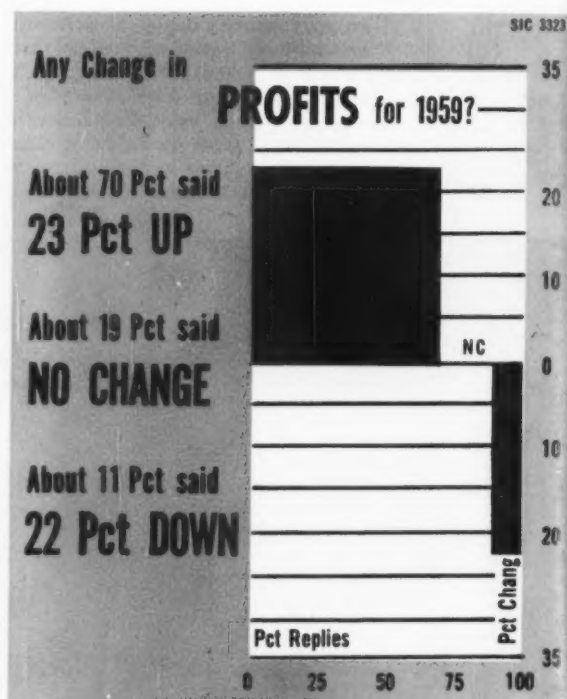
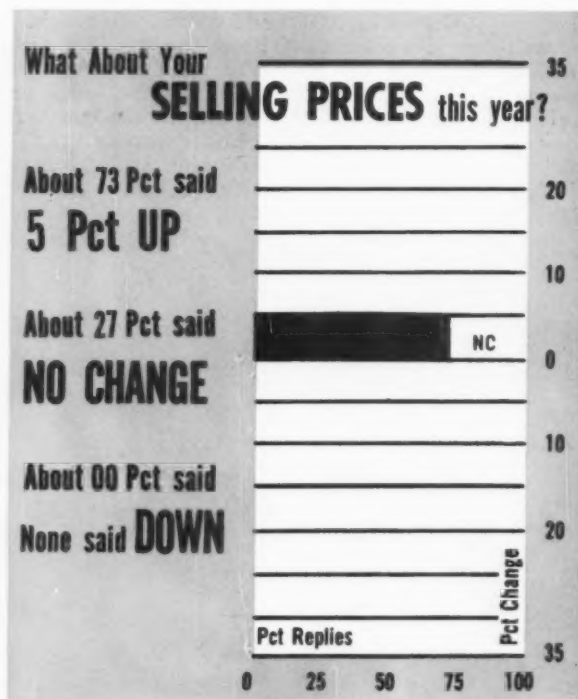
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TRACTOR SHOVELS • HOISTS

YALE & TOWNE

Yale Materials Handling Division, a division of The Yale & Towne Manufacturing Company. **Manufacturing Plants:** Philadelphia, Pa., San Leandro, Calif., Forrest City, Ark.
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Steel Founders Hope to Ride



Last year was a tough one for steel founders and now they see better things ahead.

It won't be easy. The industry has an excess of capacity and competition is rough and tough.

■ A comeback toward respectable sales and profit levels is indicated in the hard-hit steel foundry industry.

During the past year, the recession brought lower sales and resulting price cutting that left some founders in relatively bad shape.

Now, they view the brightening business picture with new hope, but few are permitting their optimism to run away with them.

One disturbing fact is that the industry apparently has an excess capacity. This results in competi-

tion that many believe is too tough to be healthy. In addition, founders face competition from other processes. Realizing their chief advantage is in lower costs, margins tend to be pared uncomfortably close.

Even with these misgivings, nearly all steel foundry executives are confident of an improved year. This is in direct contrast with a year ago when the majority forecast lower sales volume and diminishing profits.

This year, 85 pct expect better sales. This group, overall, forecasts a 23 pct sales gain. The remainder, with the exception of one extreme pessimist, count on a relatively unchanged sales rate.

The opinions on profits are more diverse. Gains of 23 pct are expected by 70 pct of the steel founders, while 11 pct reluctantly

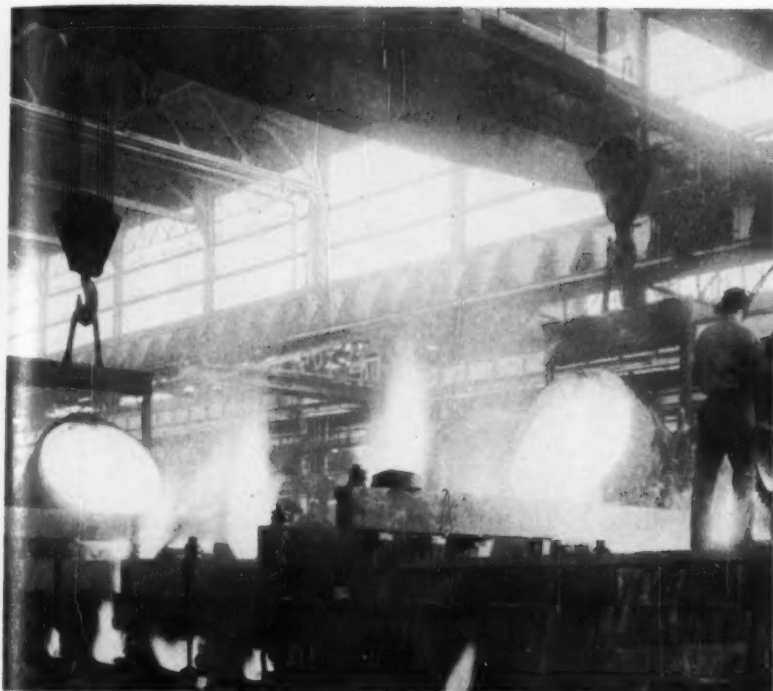
indicate profits down another 22 pct. The remainder count on no change.

Forward-thinking foundrymen believe that they can make significant technical improvements to keep their markets from fading away and they believe this effort can be helped by realistic price policies and more market development.

Indicating steel founders' determination to resist what they believe are unhealthy price cutting policies, 73 pct forecast a definite, but modest, price boost of 5 pct. The rest will hold the line, if they can. None indicated any further price cuts.

During the year, steel foundry backlogs dropped off from 64 days (weighted average) to 44 days.

Comeback Trail



Allis Chalmers Mfg. Co.

SIC 3323

Percent of Replies by Plant Size:

Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	13 Pct	11 Pct
100 to 249	38 Pct	37 Pct
250 to 499	30 Pct	28 Pct
500 and over	19 Pct	24 Pct

What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

"Sand technology and shell core development increasingly narrower limits in specifications which are very often not justified by end use."

E. Thys, President, Thys Co., Sacramento, Calif.

"We believe that our industry will probably make its greatest forward steps in tightening metallurgical con-

Continued

How Will

WAGE COSTS Compare?—

About 100 Pct said
5 Pct UP

About 00 Pct said
NO CHANGE

None said **DOWN**

Pct Replies

Pct Change

Which Way is

SALES VOLUME headed?

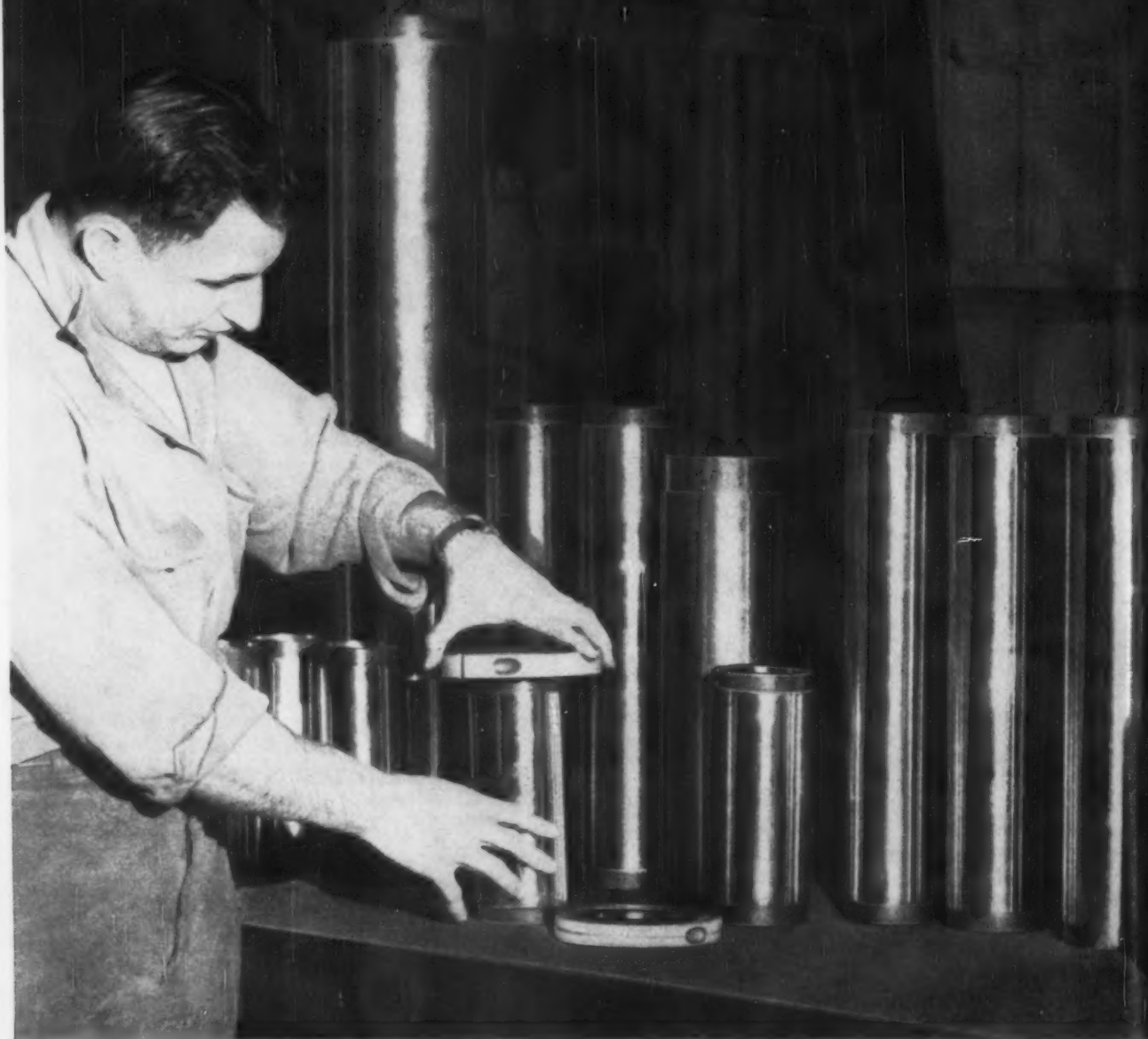
About 85 Pct said
23 Pct UP

About 15 Pct said
NO CHANGE

None said **DOWN**

Pct Replies

Pct Change



WHO FORGES THE TOUGH ONES? ... and machines and chrome plates them, too?

In producing the actuator cylinders shown above, we melted the steel, forged and precision machined the cylinders, and then chrome plated the bore to provide a wear-resistant surface. National Forge did the entire job—including final honing to an 8 RMS finish tolerance $\pm .001$. Our extensive chrome plating work, a specialty of the National Forge Company, made it possible to complete the *unusual* requirements in this

tough job, from beginning to end, all at a single responsible source.

If you have an unusually tough forging, machining, or finishing job—call National Forge.



**NATIONAL
FORGE** COMPANY

IRVINE, WARREN COUNTY, PA.

Improving Business Needs More

Most of the markets for welding equipment are looking for a good year next year.

It's logical that makers predict good sales, but are not standing still on new developments.

■ Makers of welding equipment aren't standing still. They are bringing out new equipment, utilizing new products and materials.

As a result, they are optimistic that they can improve their sales and profits in 1959. But they also know they will have to use aggressive marketing and selling techniques in a competitive market.

Several problems confront the industry. Use of new materials in manufacturing will require new welding processes. Increased use of plastics tends to threaten some es-

tablished welding operations entirely.

On the other hand, the continued trend to automation and automatic handling means more automatic and semi-automatic equipment in shops.

For the most part, makers of welding equipment see an improved sales picture this year based on improved production in their major markets. For this reason, 88 pct count on an improved sales volume this year, with the other 12 pct counting on holding their own.

Profits are also expected to go up, and relatively close to the sales volume rate. Those predicting an increase in sales count on a healthy 20 pct rise. The 75 pct forecasting an improvement in profits believe earnings should go up about 17 pct.

With 80 pct expecting a rise of 4 pct in wages, it's not surprising that most believe prices will go up.

With other costs also on the rise, a 5 pct climb in prices is forecast by the 56 pct who see a price movement.

While higher sales of welding equipment are predicted for this year, one member of the group threw in a word of caution about raising selling prices.

Reasoning behind this is that higher prices may result in more cautious purchasing policies and consequently lower sales.

Probably because of a last quarter improvement in business, manufacturers in this field saw their backlogs grow to 40 days (weighted), a lengthening of 11 pct.

During the year most of the makers (73 pct) cut their inventories of raw materials. But only 36 pct cut their stocks of finished goods, with 64 pct reporting no change.

Air Reduction Co.



What Industry Executives say:

Q: "What technical development or marketing problem do you feel will have the most important effect on your industry during 1959?"

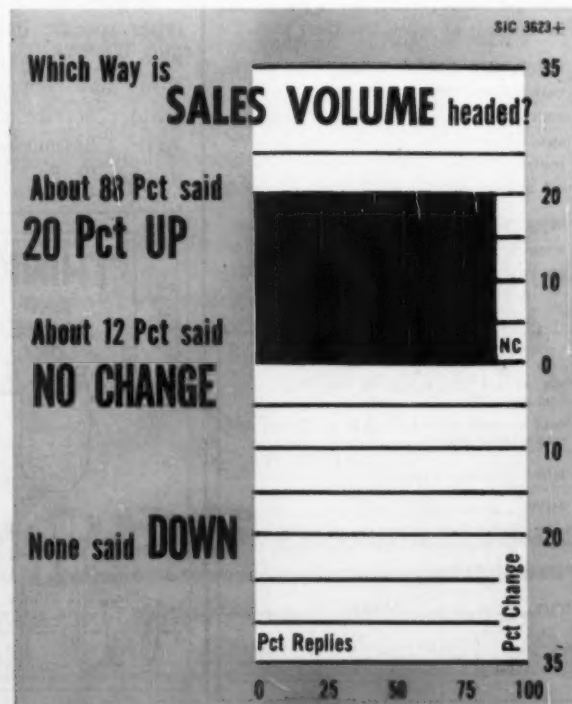
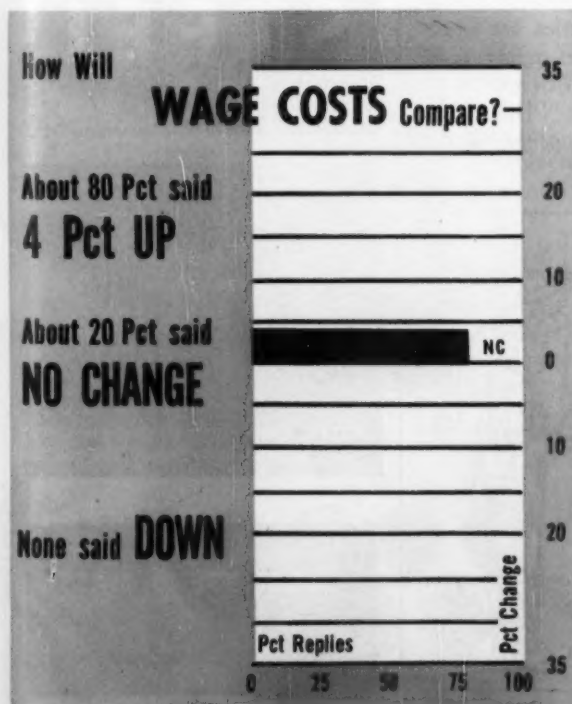
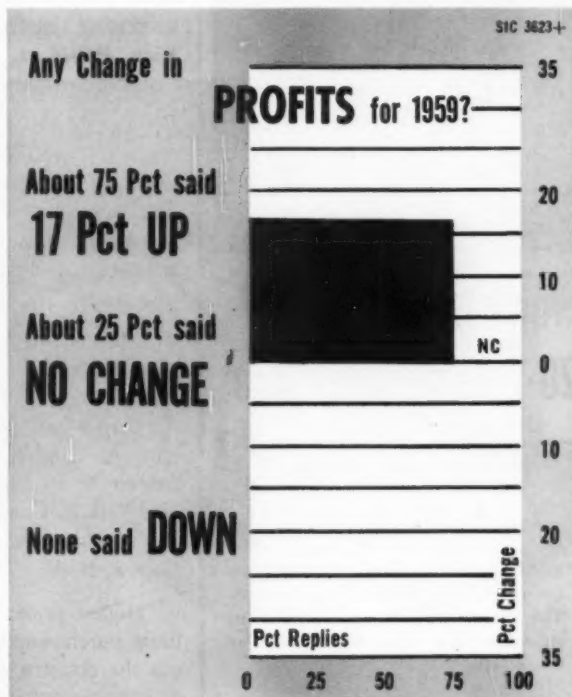
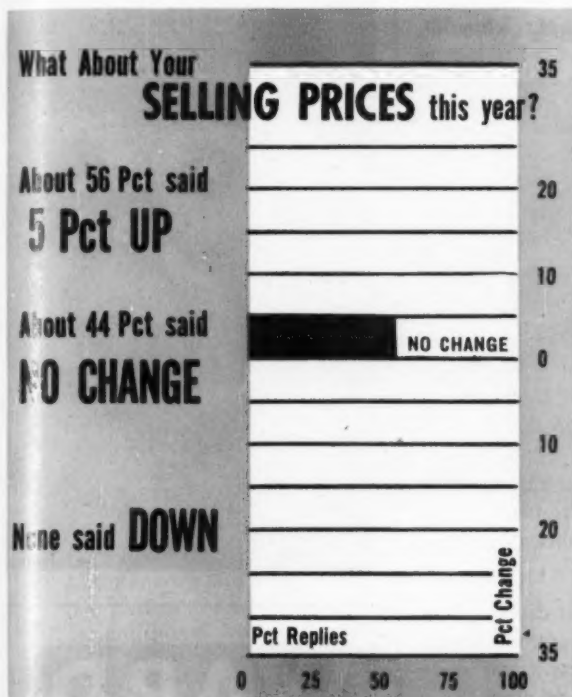
"The new jet planes using our ground power equipment." E. A. Hobart, President, Hobart Bros., Co., Troy, Ohio.

"Use of newly developed materials to improve our products—effect is good. Price cutting—effect is bad." D. H. Carrigan, Vice President, Kirkhof Electric & Mfg. Co., Grand Rapids, Mich.

Continued

Welding Equipment

SIC 3623+		
Percent of Replies by Plant Size:		
Plant Size, No. of Workers	Total Plants by Size	Replies from Group by Size
50 to 99	35 Pct	56 Pct
100 and over	65 Pct	44 Pct





Which piece of 20 carbon steel was gouged in 26 minutes?

These two blocks of 20 carbon steel are 7 in. square and 8 in. long. The groove is $2\frac{1}{4}$ in. deep. The block on the right took $1\frac{3}{4}$ hours to chip out. The one on the left was gouged with an Arcair torch in 26 minutes — four times faster!

You can cut, gouge, bevel or groove any metal using the Arcair method — and get dramatic cost savings with an investment of much less than \$100.

HOW DOES ARCAIR WORK? The torch utilizes air from an 80 p.s.i. air line, current from a welding machine and special electrodes to melt and remove metal. Fifteen minutes instruction is all an operator needs.

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Arcair

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Send me more information on Arcair Trenches and special electrodes.

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MY PROBLEM { _____

Welding Equipment, continued

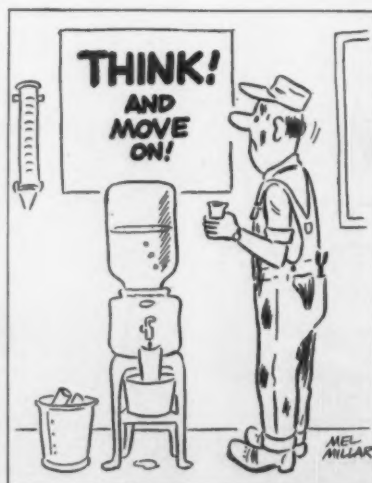
"New metals and plastics plus a more realistic approach to industrial distribution both by the manufacturer and the distributor. Distributors I believe will be required to do a greater portion of the direct marketing job." **K. H. Schmoldt, Vice President, K-G Equipment Co., Inc., Allentown, Pa.**

"As the steel production increases the total need for welding equipment and electrodes will increase. The trend toward costs will force the adoption of more welded construction and automatic - welding procedures."

"More competitive markets will require better tooling to reduce manufacturing costs of our products. A harder selling policy will be adopted using sales personnel with special technical training in our field." **B. E. Long, President, Cayuga Machine & Fabricating Co., Depew, N. Y.**

"Higher prices will cause a cautious purchasing program throughout the country unless a war scare or runaway inflation develops."

Reprints of the report for this or other specific industries are available as long as the supply lasts. You may obtain a copy from Reader Service Dept., The IRON AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.



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PRODUCTION
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"Today's commercial standards of flatness are obsolete"

Says Wm. H. Rose, President of Voss Engineering Company



"Steel customers today won't willingly accept sheets or coils that meet only current commercial tolerances . . . and they don't want to pay extra for additional leveling operations."

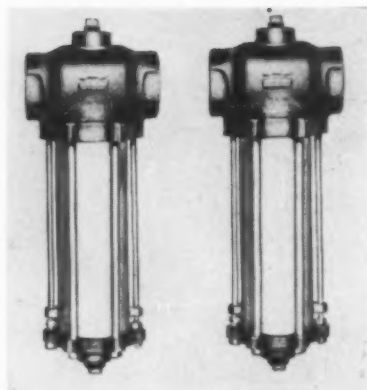


Raise your flatness far above commercial standards with a Voss Inverted Roller Leveler. Voss gives precision leveling at high production speeds. Successfully in use on continuous coil lines producing over 1000 tons daily, Voss Levelers equal or exceed stretcher-level flatness in most hot or cold-rolled applications, and impart high non-fluting properties to galvanized steel.

Let us demonstrate the Voss-patented features that assure you precise area control and trouble-free operation. You can enjoy the advantages which leading steel and non-ferrous metal producers (including producers of high-tensile missile materials!) are obtaining with Voss Roller Levelers. Write today for booklet and list of users.



New Materials and Components



Strainers Work Well Despite 75-pct Blocking

Spraying system line strainers now come in threaded pipe connection sizes 1/4 to 4 in., with flanged connections for 3, 4 and 6-in. pipe sizes. Strainers are available in stainless steel, brass or cast iron. Each strainer takes up to 75 pct blocking with less than 1/2-lb pressure drop under normal flow conditions. Dual screen design gives a heavy outside screen to protect

against surge and bursting and a fine-mesh inside screen for straining. Strainers flush easily. Screen areas for each size are unusually large. Screens are supported top and bottom by flange collars, providing both seal fit and rigidity. Larger capacity strainers are equipped with a top outlet for gage mounting. (Spraying Systems Co.)

For more data circle No. 22 on postcard, p. 367



Control Valves Fit Air, Oil or Vacuum Lines

Diaphragm operated, new control valves actuate via any 3-way pilot valve, instrument control, cycle controller or process timer. Suitable for use in air, oil or vacuum circuits, the valves feature neoprene covered, synthetic fabric diaphragms. These give high flexibility and resistance to oil, plus high bursting strength. For 20 to 60-psi air actuation, the valves serve at 151 psi instrument pressure. They handle intermittent actuation pressures up to 125 psi.

However, for continuous actuation at 60 psi or over, the maker recommends cylinder-operated valves. The diaphragm-operated end section works with any combination of the company's 2-, 3- or 4-way valve bodies and end sections. Open-end or piped exhausts are optional on 3- and 4-way types. A complete range of mounting styles is offered; port sizes run from 1/4 through 1-in. NPT. Straight-through construction speeds in-service maintenance. (Valvair Corp.)

For more data circle No. 23 on postcard, p. 267

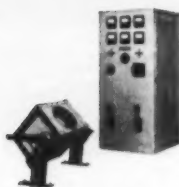


Synthetic Rubber Tires Are Long Lasting

Polyurethane type synthetic rubber solid industrial tires boast extremely long wearing qualities. Made from a cast polyurethane type rubber, the tires are designed for pallet roller wheels and steer wheels. They currently are being produced on a pilot plant scale. The new material has very high resistance to cutting and chipping. It also has excellent oil, weather and abrasion resistance. High load

bearing and cushioning are other features. In addition to long life, use of the new type tire reduces floor maintenance costs and protects equipment and loads against damaging shock through its cushioning action. Other areas of application for the tire material are silent gears, rollers and specialized rubber items. (Goodyear Tire & Rubber Corp.)

For more data circle No. 24 on postcard, p. 267



WHAT DOES

INDUCTOMELTING*

MEAN TO YOU?

WITH INDUCTOMELTING



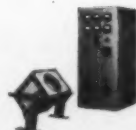
You get all the inherent advantages of high-frequency induction melting—high melting speeds, low metal losses, accurate analysis of alloys, precise temperature control, homogenous melts, greater purity—combined with the many benefits available only in INDUCTO equipment.



INSTALLATION COSTS ARE LOWER. The control panels are shipped complete—including the capacitor bank, selector switches, high-frequency transformer, even the M-G set in some units—and ready for easy installation. The furnaces have side-entrance leads, eliminating the need for furnace pits. A minimum amount of bus bar is needed to complete an installation.



OPERATING COSTS ARE LOWER. Every INDUCTO component is constructed with operating efficiency in mind. The water-cooled furnace leads, the selector switches, the furnaces themselves, the numerous control components, the transformers with an efficiency of 99.5%—all have been designed and selected for the best possible operation. When combined with INDUCTO'S high melting speeds and accurate metallurgical control, these features mean appreciable savings for you.



MAINTENANCE COSTS ARE LOWER. It is a natural consequence that equipment designed for the best possible operation will perform satisfactorily over a long period of time. Careful engineering plus the singular use of strictly quality materials and components means longer trouble-free operation.



The end results of INDUCTOMELTING are better, lower-cost castings with less rejects—just the competitive advantage you need to build sales volume and profit. For complete details, write for Bulletin 70, Inductotherm Corp., 412 Illinois Ave., Delanco, N. J.

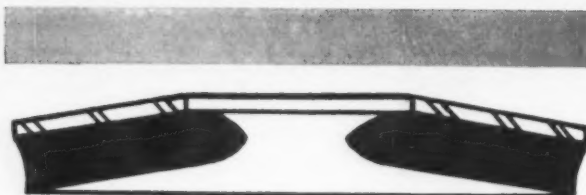
*INDUCTOMELTING is high-frequency induction melting PLUS the additional advantages of Inducto design features and engineering techniques.



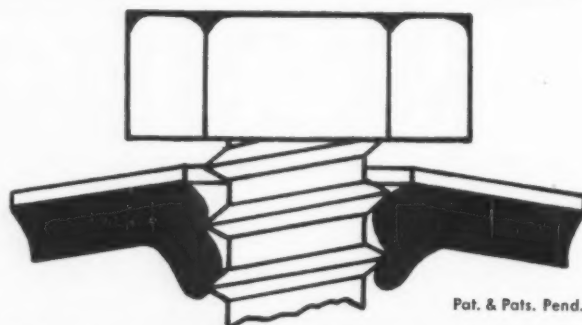
INDUCTOTHERM

... the mark of modern melting

for MORE than Quality specify TOPSEAL* Fasteners with Functional Design



WEATH-R-SEAL® "Deflectible Lip" Cross Section View assembled only to TOPSEAL FASTENERS



Sealing Action as TOPSEAL is driven

TOPSEAL ROOFING & SIDING FASTENERS

Every detail of each component of the TOPSEAL System of Structural Fastening* incorporates the finest features of design, engineering, and fastening technique. BEGINNING WITH —

The WEATH-R-SEAL® Washer, factory assembled to each TOPSEAL Fastener. This positive sealing, one piece bonded metal and neoprene composition washer is completely functional. Its "deflectible lip" seals around the fastener shank — bonding controls the sealant's flow around the washer's outside diameter — resulting in a permanent double seal. Double protection for the vulnerable point — where the fastener penetrates the covering material. PLUS —

Holding power far in excess of standard requirements, TOPSEAL Fasteners are designed for easy driving, with no thread rolling—installed from the Weatherside. AND —

Economy as reflected in highest Quality—Coupled with Functional Design.

The TOPSEAL System of Structural Fastening includes engineering assistance, fasteners, drilling and driving tools, drill bits, special sheeters sockets and accessories, and FABCO Closures.

Consult us for recommendations and specifications. Representatives in principal cities.



"There's Only ONE TOPSEAL"

FABRICATED PRODUCTS CO.

West Newton, Pa.

*Trademark

DESIGN DIGEST

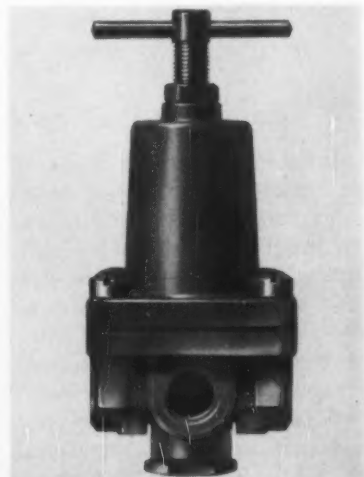
Foundry Belt

Heat-resisting impregnation compounds combine with asbestos outer plies in new foundry conveyor belting. Various grades of it withstand 600° F. Base fabric is heavy-duty hard silver duck (tensile strength over 850 ppi of width). Double-stitching prevents ply separation even if threads are broken or cut. (Imperial Belting Co.)

For more data circle No. 25 on postcard, p. 267

Air Regulator

This general-purpose air pressure regulator is extremely compact in design. It's designed to meet a wide range of requirements where larger regulators were previously specified, such as in air compressors and



paint spray rigs. Constructed of die-cast zinc, with internal parts of brass, and diaphragm and disk of oil-resistant Buna-N, the valve is available in 1/4-in. size only. (Watts Regulator Co.)

For more data circle No. 26 on postcard, p. 267

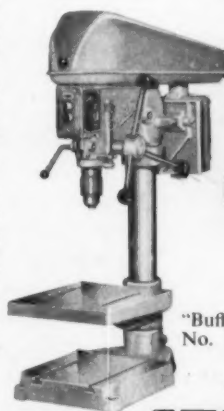
Gear Couplings

Some 800 hours of continuous operation at almost 5° total misalignment is the performance record of a new flexible gear coupling with a nylon sleeve. The coupling weighs just 4 oz. Including steel hubs and retaining rings, it weighs 3 1/2-lb total. The coupling never needs lubrication; maintenance is nil in

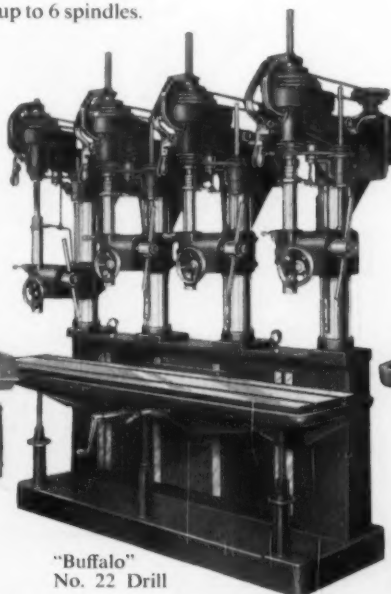
**FOR LONGER LIFE—
BETTER PERFORMANCE
GET "BUFFALO"
QUALITY
DRILLING MACHINES**

THE "BUFFALO" No. 22 DRILL is designed for rapid, precise sequence drilling and tapping up to 1 1/4" in mild steel. The No. 22 has an abundance of smooth power, plus complete rigidity for accuracy and long, maintenance-free life. Adjustments and operation are as easy as with lighter, sensitive drills. As in all "Buffalo" Drills, the precision ball bearing spindle assures the utmost dependability. Available in floor or pedestal types and in multiple units up to 6 spindles. To speed your drilling operations and cut costs, investigate the "Buffalo" No. 22 Drill. Check and mail handy coupon below.

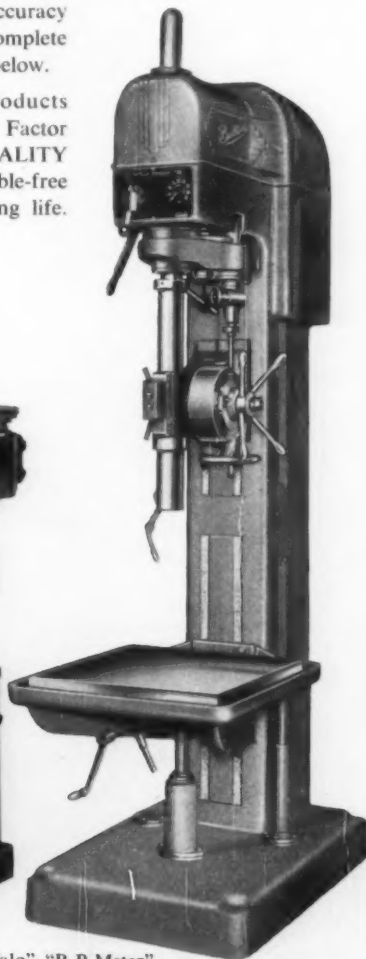
THE "BUFFALO" No. 15 DRILL was recently completely redesigned to bring you a new high in flexibility, ease of operation and trouble-free long life. Rigid, heavy construction enables the No. 15 to operate at full capacity with no undue strain or wear. Yet extreme sensitivity is provided for small hole drilling. Fill your needs from floor, bench and pedestal types—the two latter in 1 to 6 spindle models. See how the "Buffalo" No. 15 Drill can economically increase your production output. Mail coupon below for full information.



"Buffalo"
No. 15 Drill



"Buffalo"
No. 22 Drill



"Buffalo" "R-P-Mster"

THE "BUFFALO" "R-P-Mster" is the famous variable speed drill which has attained new heights of drilling ease and smoothness. Newly re-designed for greater capacities, the No. 1A is rated at 1" in mild steel, the No. 2A is rated at 1 1/2" in mild steel and the No. 3A at 2". Easily-reached controls vary the spindle speed infinitely within a wide range. Available in pedestal models (1 to 6 spindles), the "Buffalo" "R-P-Mster" features extreme accuracy and long life. For complete facts, use coupon below.

All "Buffalo" products bring you the "Q" Factor — the built-in QUALITY which provides trouble-free satisfaction and long life.



**DRILLING
PUNCHING
SHEARING
BENDING**



BUFFALO FORGE COMPANY

492 Broadway, Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Please send me additional information on the following "Buffalo" Drilling Machines:

☐ No. 22

☐ "R-P-Mster"

☐ No. 15

NAME _____

FIRM _____

TITLE _____

ADDRESS _____

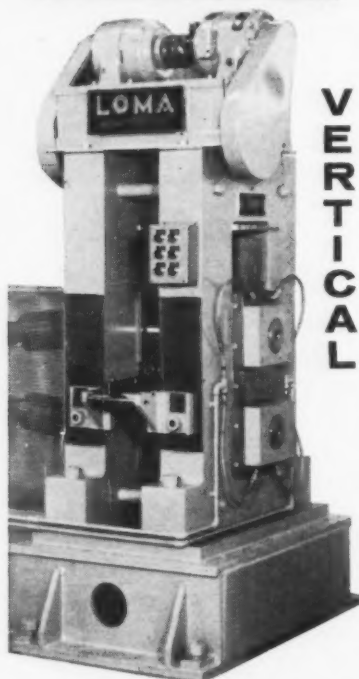
CITY _____

ZONE _____

STATE _____

LOMA

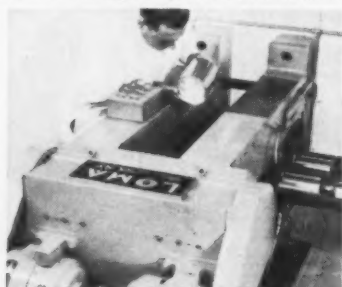
COMBINATION MILL



VERTICAL

2½" & 8½" x 8" Four-High Setup for Strip Rolling

8½" x 8" Two-High Setup for Powder Metal Rolling



HORIZONTAL

The new LOMA Model 1000 Two-High/Four-High Combination Rolling Mill offers maximum versatility for both laboratory use and production application. With the rolls arranged in a vertical plane, the mill is employed for (a) hot or cold two-high breakdown rolling of flats and shapes; and (b) four-high cold finish rolling of sheet and strip. With the rolls arranged in a horizontal plane, the machine is used for the continuous compacting of powder metals into strip.

LOMA
MACHINE MFG. CO., INC.
114 East 32nd Street
New York 16, N. Y.

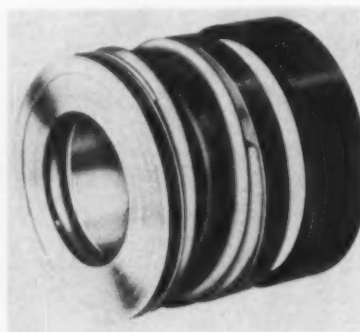
DESIGN DIGEST

many cases. It works over a wide temperature range at speeds to 5000 rpm. (Sier-Bath Gear & Pump Co., Inc.)

For more data circle No. 27 on postcard, p. 267

Compact Seals

Self-contained, compact seals fit 1-in. diam shafts. They find uses in all types of jet water pumps, oil pumps, reduction units or appliances such as washing machines. They can be used on any rotating shaft, sealing liquids which won't



attack the Buna-N flexible parts or brass metal parts. Seals are available for ⅝ and ¾ as well as 1-in. diam shafts. Face of the seals withstands high face loading and heat. It is true carbon to prevent porosity. (Garlock Packing Co.)

For more data circle No. 28 on postcard, p. 267

Hardfacing

High speed, high deposit and low cost are features of a new spray-powder material. It permits hardfacing with sprayed tungsten carbide at better than 90 pct deposit efficiency. Coating speeds are 110 to 150 sq ft per hour with 0.001-in. thickness. Any coating thickness may be applied. (Metallizing Engineering Co.)

For more data circle No. 29 on postcard, p. 267

Air-hydraulic Boosters

Air-hydraulic boosters in a new line convert instant action of air into firm force of hydraulic pressure. The boosters mount vertically. This prevents dead weight of internal parts from distorting the hy-

draulic seal. A unique air filter, threaded into the air-chamber breather hole consists of tiny particles of solid bronze. These are pressed together to make a fine mesh. Grit and dirt particles are stopped dead by this. (Wilton Tool Mfg. Co., Inc.)

For more data circle No. 30 on postcard, p. 267

Power Packages

Self-contained, new versatile power packs produce hydraulic power from an electric source. They include: an electric motor, hydraulic gear pump with integral relief valve, check valve and reservoir in one compact assembly. Gear pump capacity ranges from 0.36 to 0.80 gpm. (Wooster Div., Borg-Warner Corp.)

For more data circle No. 31 on postcard, p. 267

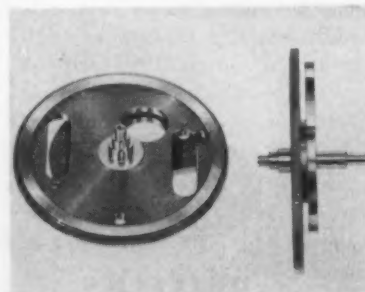
Conveyor

Material on a moving powered roller conveyor can now be stopped while the conveyor continues to run. Making this possible are new fluid filled rollers. No damage to conveyor or material results. (Harry J. Ferguson Co.)

For more data circle No. 32 on postcard, p. 267

Cam-Shaft-Gear

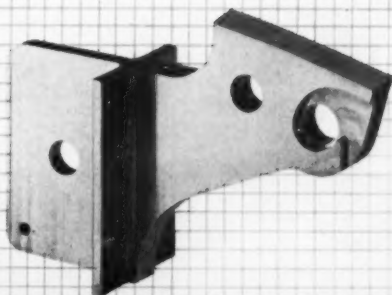
This component, made from a single piece of bar stock, is a cam, a shaft, and a gear, all in one piece. The metal is 440-F stainless. Open space between cam and gear is 0.065 in. There are 225 teeth in



the straight spur gear, in a diameter of only 2 11/32 in., with a pitch of 96. Tooth-to-tooth tolerance is 0.002 lb. Total composite error is held to 0.0007 in. Cam tolerance is ±0.0001 in. It is held to a 4 microinch finish. This cam



LEADERS IN NUMERICAL CONTROL



high performance at low price

DIGIMATIC* 180

CONTOURING CONTROL SYSTEM

Lowest priced high performance control now being marketed for heavy duty machine tools. Compact, efficient design. Reliable, easily maintained construction. Simple to learn and operate. Fifteen Model 180 control systems, combined with contour milling machines, are being delivered to Air Force contractors to provide shorter lead times, new design freedom and faster, lower cost production.

Handles any size boring mill, profiler, vertical turret lathe, bed-type milling machine or lathe. Gives three-axis coordinated control with up to 180 inches per minute cutting rate. Designed for ± 0.001 -inch control accuracy; officially tested at ± 0.00025 -inches. All around finest machine tool control system available today.

Write for 12-page "Model 180 Control System" Catalog.

ELECTRONIC CONTROL SYSTEMS

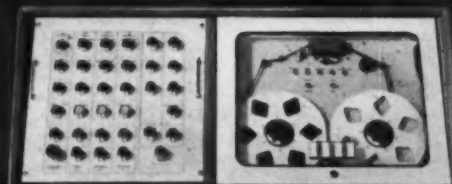
Division of

STROMBERG-CARLSON

DIVISION OF GENERAL DYNAMICS CORPORATION

2231 S. Barrington Avenue • Los Angeles 64, California

*DIGIMATIC is our trademark

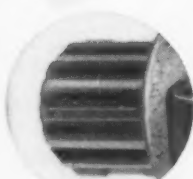


introducing the **ALL NEW**
SIZE 834 impactool...
 1 1/4" capacity

25% more power!
6 3/4 inches shorter!
7 pounds lighter!

than the size 534

optional features



Spline Drive Anvil

For transmission of maximum power to the socket, many prefer the spline drive which is optional. The closer fit and greater driving area also provide increased socket life.



Swivel Inlet Assembly

Where extreme maneuverability is a problem, the optional swivel inlet assembly makes the hose easier to handle.



Inside Trigger Handle

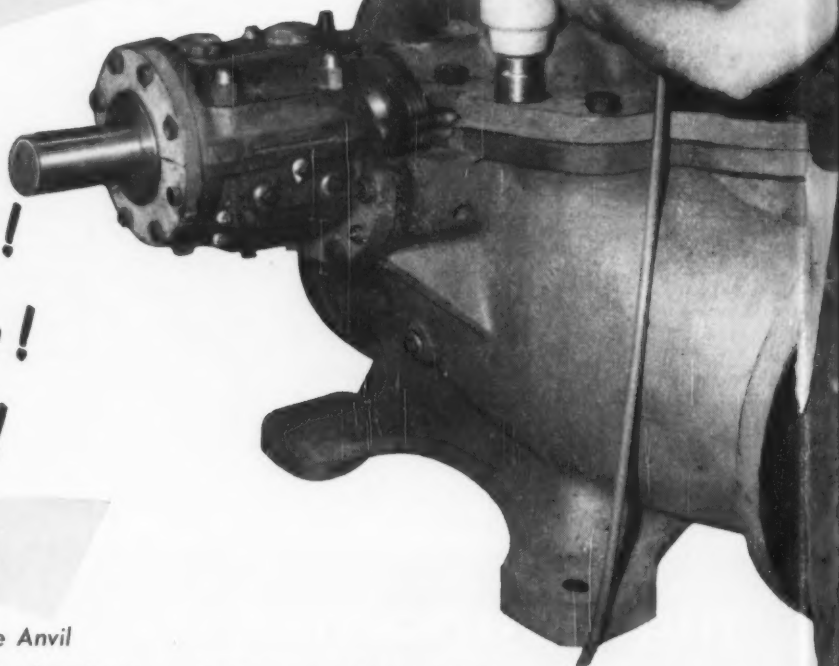
Preferred by some operators, the optional inside trigger handle prevents the possibility of the operator's hand being caught when the tool is used in extremely close quarters.



FREE! New Form 5248—describes the Ingersoll-Rand 834 Impactool in detail. Contains photos, specifications and lists standard and optional equipment and accessories.

WRITE TODAY! Ingersoll-Rand

11 Broadway, New York 4, N. Y.



for faster run-down, easier operation
 and better maneuverability in tight spots . . .

MOTOR Powerful new vane-type motor with direct drive to hammer provides greater torque and five times faster run-down. Motor housing is machined from a strong, lightweight alloy.

IMPACT MECHANISM New design operates at maximum efficiency to tighten the toughest nuts and bolts. Rated capacity, 1 1/4" thread size. No kick or twist is transmitted to the operator.

THROTTLE VALVE Graduated-action throttle valve permits quick homing of socket on nut. Rubber face provides positive seal; can be quickly and economically replaced when necessary.



Ingersoll-Rand

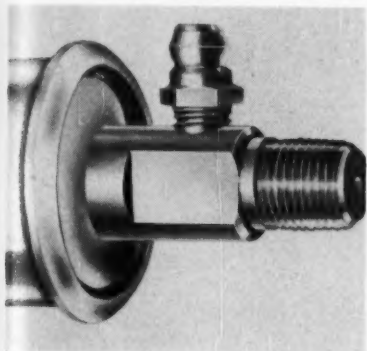
Tools plus All Engineering
 increase output per man

was milled and ground on a special exclusive machine. Single experimental units of production lots of such precision pieces are available. (Eonic, Inc.)

For more data circle No. 33 on postcard, p. 267

Grease Injector

Holding a reservoir of lubricant, this bearing lubricator automatically injects grease as needed. Position of its pressure cup signals at a glance



amount of grease remaining in the reservoir. Measuring 2¼-in. long and 1½-in. diam, it's installed one to each bearing simply by removing

the Alemite or Zerk fitting and screwing the automatic lubricator into place. It operates in any position, fills via any standard grease gun. (Anchor Chemical Co.)

For more data circle No. 34 on postcard, p. 267

Ground Plate

Custom cut and ground steel boiler plate is available for use where less precision and little machining is necessary, as in bolster plates, weldments, large fixtures, etc. In thicknesses to 4 in., this less expensive, lower quality hot rolled steel plate comes in squares, rectangles, circles, rings and contour shapes. (Trico Mfg. Co.)

For more data circle No. 35 on postcard, p. 267

Gearmotors

Integral gearmotors in both concentric shaft and right angle types have just become available for integral horsepower motors through 100 hp. They come with either open or totally enclosed motors, double and triple reduction in standard

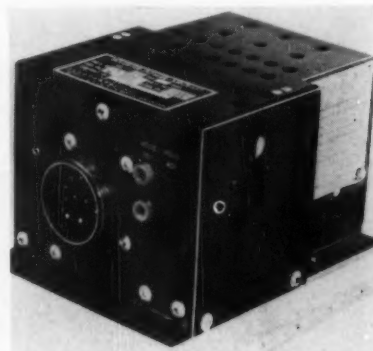
DESIGN DIGEST

ratios. A minimum of moving parts assures compactness, quiet operation. Hardened gears contribute to long life. (Allis-Chalmers Mfg. Co.)

For more data circle No. 36 on postcard, p. 267

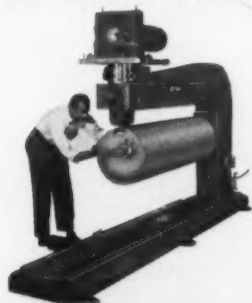
Current Converter

Converting direct current to ac without moving parts, this static in-



verter supplies 800-cycle power from nominal 28-v sources. Measuring 3.6 x 4.5 x 6.4 in., it weighs just 4½ lb installed. It delivers 150

Airline MODEL 44572 Combination Longitudinal and Circumferential WELD ROLL PLANISHER



This Airline 10 ton roll planisher features a 72" throat and 36" clearance above rails for working shells, truncated cones, etc. over lower roll. Unlimited work space above upper roll. This unit may be used for leveling welds in steel and stainless steel up to ¼" in thickness. Idler and powered pressure rolls swivel 90° to permit selection of longitudinal and circumferential application.

advantages

Roll planishing simultaneously flattens and smoothens the weld crest and root bead. In doing so, the weld's columnar structure is cold worked. This inherent cold working is not only beneficial in improving the mechanical properties of the weld joint, but is also beneficial in uniformly relieving stresses caused by weld shrinkage.

Request Airline Bulletin 557 describing other Airline Weld Roll Planishers.



C ELECTRIC FURNACE STEEL CASTINGS

are engineered to **YOUR** specific requirements

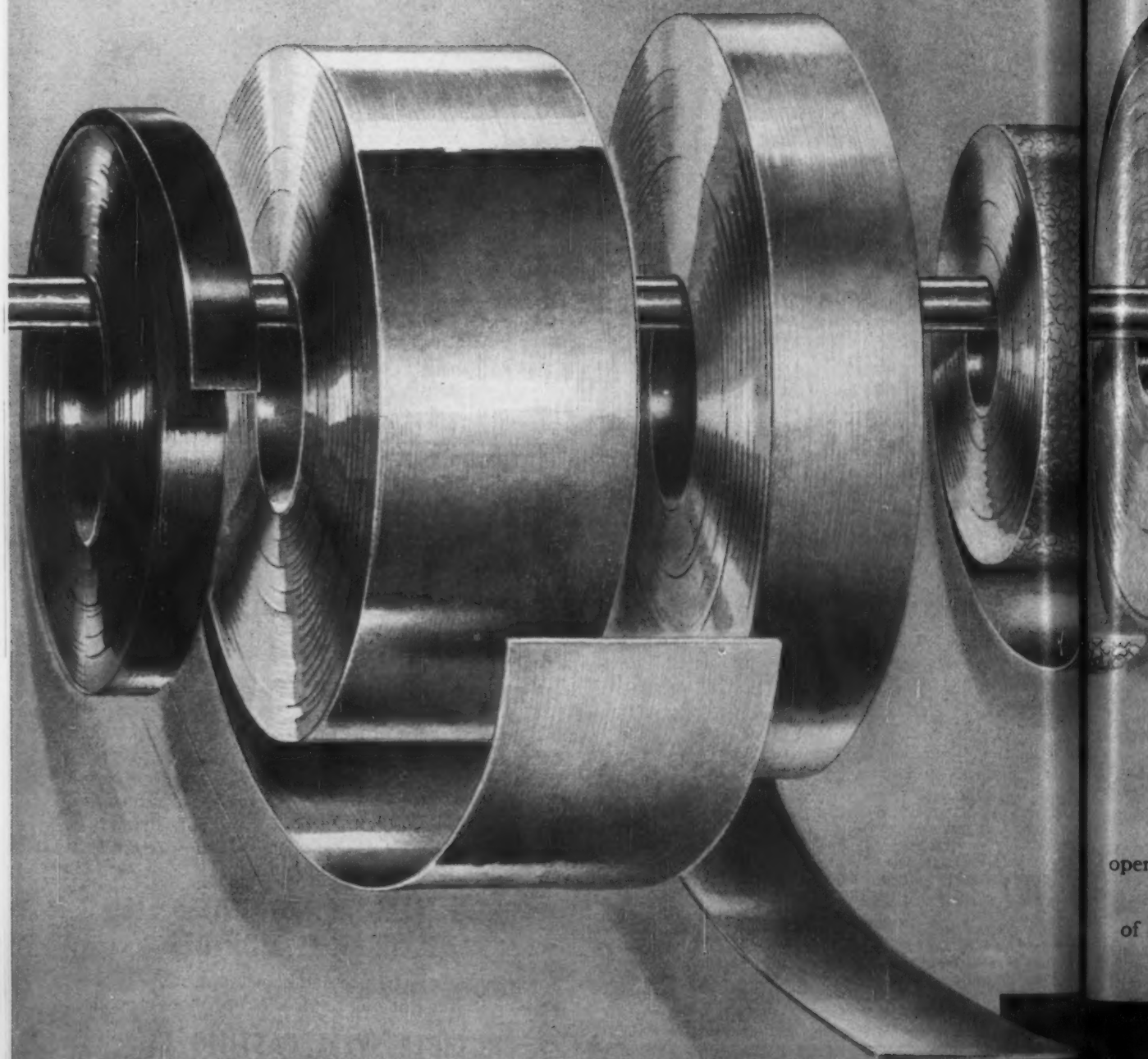
"C" steel castings are CLEAN steel castings of uniform structure that will minimize machining and assembly costs, permit of greater freedom and efficiency of design and add to your product the recognized strength, endurance and desirability of steel. C steel castings, foundry engineered from pattern to finished casting can be had in

CARBON, ALLOY OR STAINLESS STEEL SAND OR SHELL MOULDED

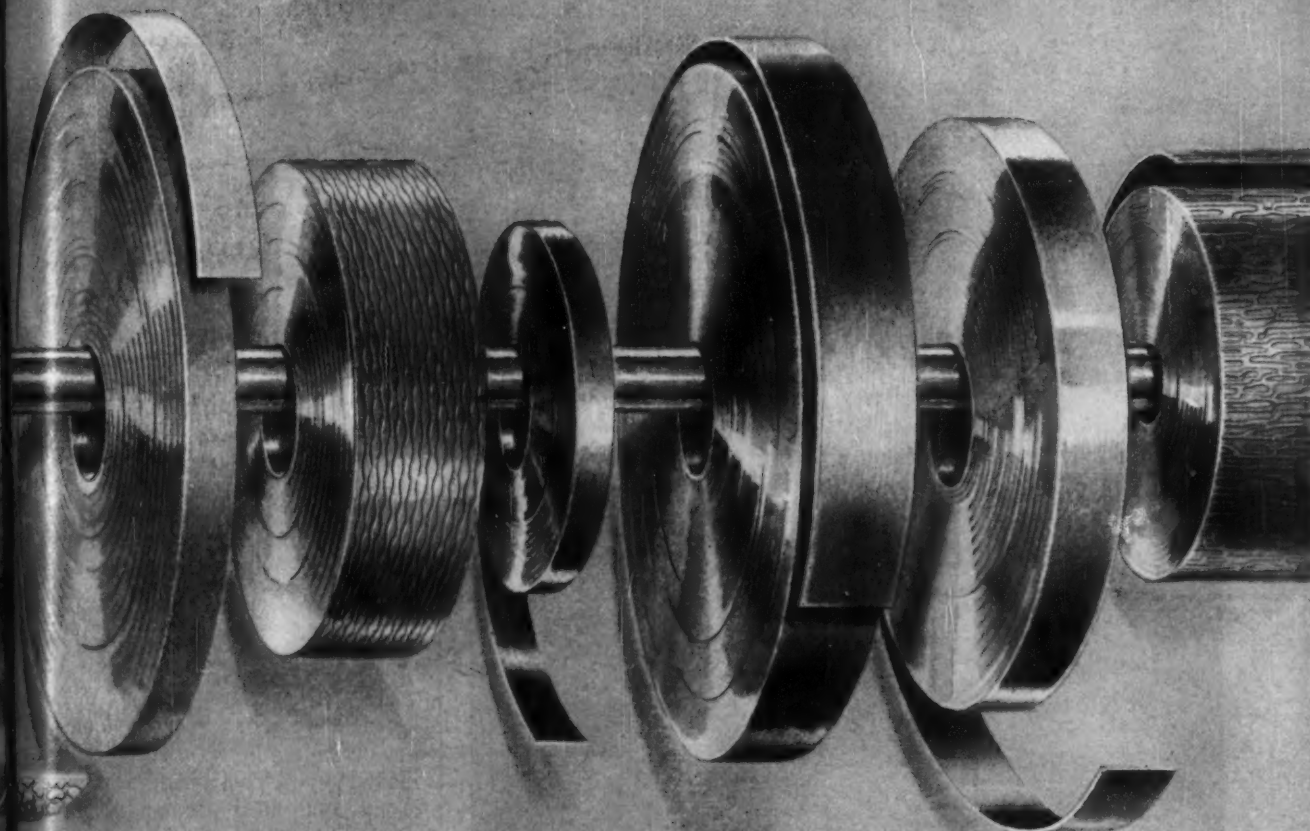
The technical experience and knowledge of our engineering staff are at your service. Write, phone, or call.

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SHARON



**a big name
in specialty steels**



For missiles or mixers, rockets or razors—whatever your steel requirements—depend on Sharon for consistent quality . . . exactly to your specifications.

Sharon makes a complete line of chrome, chrome-nickel, chrome-manganese stainless, spring and high carbon, high tensile, coated, silicon—or any special alloy—open hearth or electric furnace, of any surface pattern, including the new rolled-in designs.

If you haven't already discovered this outstanding source of specialty steels, or the significance of Sharon Quality, make it a point to talk with a Sharon salesman at your first opportunity.



SHARON STEEL CORP.

SHARON, PENNSYLVANIA



QUALITY and SERVICE

more tonnage per edge

AMERICAN SHEAR KNIFE CO.
HOMESTEAD, PENNSYLVANIA

Four Piece Assemblies at 600 per Hour With Kenco 15-Ton Electro-Safe Punch Presses



These two Kenco Presses each assemble four parts of electric irons at the rate of 600 components per hour at General Electric Company, Ontario, California. A third Kenco on the line assembles these components with a top plate. Parts are fed to the operators through hopper bins and assembled parts are carried away on a belt conveyor.

Kenco Electro-Safe Presses are used because of their unprecedented safety features and their ability to stay on the job — for maximum production. The press has no flywheel — in single stroke operation the press and motor go dead, eliminating double-tripping and stored-energy hazards. The operator must hold two widely spaced controls depressed to single trip the machine. A locking dial permits changing from "single trip" to "continuous trip" or "inching".

The Electro-Safe control can be connected to the die area to stop the ram on the downward stroke should any irregular feeding occur, thus protecting both the part and the die set. In addition, extra long ram guides keep perfect alignment which results in long die life, and many other exclusive features to keep them on the job.

You too can increase production with Kenco Presses — and at the same time increase profits. Can we give you additional information?



JOB FACTS:

Company: General Electric Co., Ontario, California

Machines: 3 Kenco 15-Ton Electro-Safe Punch Presses

Job: Assembling 4 Parts each for electric irons

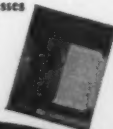
Shifts: Up to 3 for 9 months.

Maintenance: Brake relined.

Considerable Brake Failure

Production: 600 assemblies per hour

Remarks: "The presses are extra safe" and "Dies last longer".



5211 Telegraph Rd., Los Angeles 22, Calif.

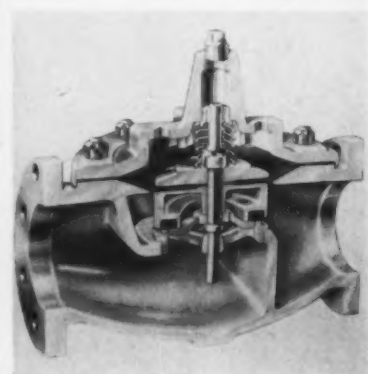
DESIGN DIGEST

VA of continuous 115-v power. Life expectancy of the all-transistor unit exceeds 50,000 hours. (Electro-solids Corp.)

For more data circle No. 37 on postcard, p. 267

High-heat Valve

Continuous service in heat up to 250°F is provided by a versatile automatic valve. Hydraulically activated, the remote-control valve features a backless design. The

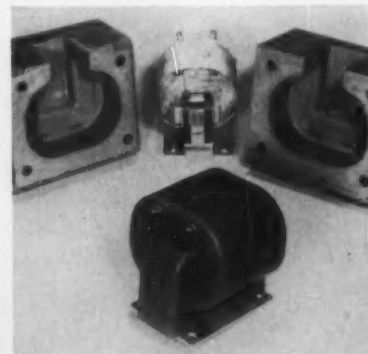


valve disc which opens and closes the valve is an integral part of the diaphragm assembly. Maintenance is down since no lubrication or packing is required. (Automatic Valve Systems Co.)

For more data circle No. 38 on postcard, p. 267

Epoxy Compounds

Single component epoxy compounds recently announced are ready to use without hardening agents. Both filled and unfilled sys-



tems offer several degrees of flexibility and heat resistance exceeding 150°C. (Houghton Laboratories, Inc.)

For more data circle No. 39 on postcard, p. 267

Look Overhead... see "NORTHERN"



Versatility—when and where you need it!

LOCATION

*In an automotive industry
tool and die shop.*

SPAN

84-feet, centers of runways

CAPACITY

*40 tons on main hook —
10 tons on auxiliary hook*

Overhead material handling in an automotive tool and die shop requires maximum versatility and fine control. The overhead crane may be called upon to spot a heavy duty press for try-out; to handle heavy body or chassis dies; and to move lighter, miscellaneous dies. Fast, safe precision handling for all such tooling is essential to cooperate with customers' requirements.

The NORTHERN Crane shown was installed in a heavy die shop. It provides flexibility, saves time, facilitates try-out, and is convincing that this shop is equipped to handle big responsibilities in a big way!

NORTHERN Hi-Lift Cranes—up to 20 tons—and NORTHERN Super Cranes—up to 150 tons—and up to 125 feet in span, provide a wide range of choice, and versatility when and where you need it.

Please consult with us before you invest in overhead cranes and hoists.

NORTHERN MATERIAL HANDLING EQUIPMENT

NORTHERN ENGINEERING WORKS

210 CHENE ST. • DETROIT 7, MICH.

New Production Ideas

Equipment, Methods and Services

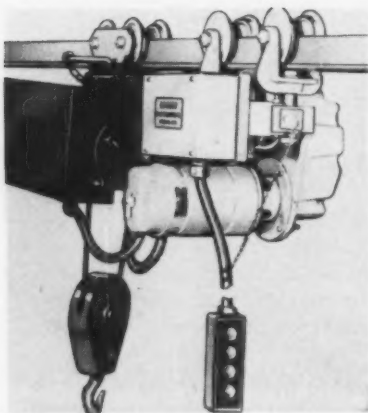


Instrument Tests, Sorts Mixed Metal Parts

Nondestructive testing and sorting of accidentally mixed or incorrectly processed metal parts is done speedily by this instrument. It works on either ferrous or nonferrous metals. The unit sorts raw stock, semi-finished, or finished parts by their metallurgical characteristics such as analysis, hardness, structure, case depth, etc. With a known and acceptable part used as a "standard"

in adjusting the instrument, unwanted parts are quickly separated from the good ones. It can act as a "hand" sorter; in this case the operator watches the screen and manually throws out off-standard parts. Or it can work in conjunction with an automatic relay unit. (J. W. Dice Co.)

For more data circle No. 40 on postcard, p. 267

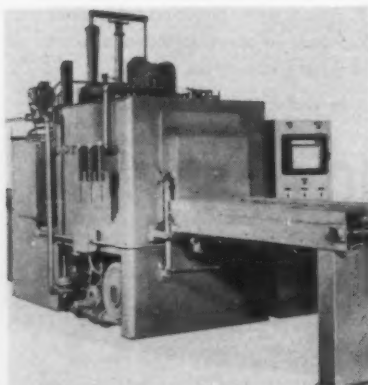


Electric Monorail Drive Runs On Any System

Electric monorail drives provide powered travel for hoists or other load carriers along a monorail system, or across bridges. The drive unit handles live loads up to five tons at travel speeds up to 2000 fpm. It operates on virtually any type monorail system. Traction is through a spring loaded, solid rubber drive wheel. This runs on the underside of the track. Power transmits to the spring compressed drive

wheel through a spur gear reduction unit. Precision cut gears are contained in a sealed housing running in a bath of oil. Forged steel trolley wheels mounted on pressure lubricated precision bearings support the unit. Full magnetic type electrical controls operate from a pushbutton type pendant control. (Becker Crane & Conveyor Co.)

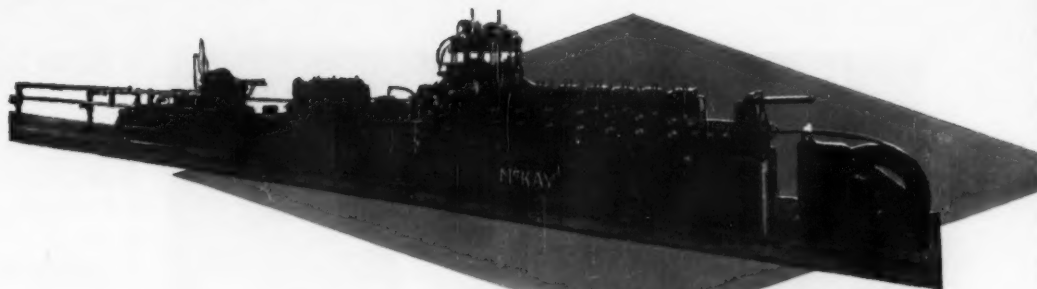
For more data circle No. 41 on postcard, p. 267



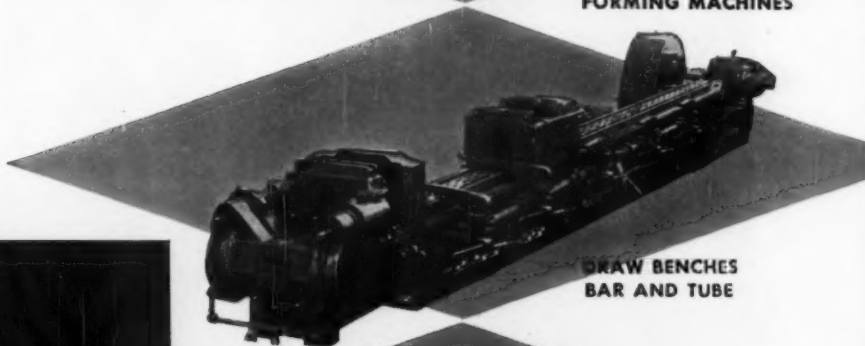
Furnace Setup Is Complete Heat-Treat Unit

This heat treat furnace is a complete heat treating unit within itself. The furnace is a controlled atmosphere, gas-fired, radiant tube heated unit for heat treating metal to 1850°F. All together, the setup includes automatic loader, automatic transfer mechanism for work (from heating to cooling chamber), water jacketed atmosphere cooling chamber, oil quench tank with automatic quench rack, two stage forced

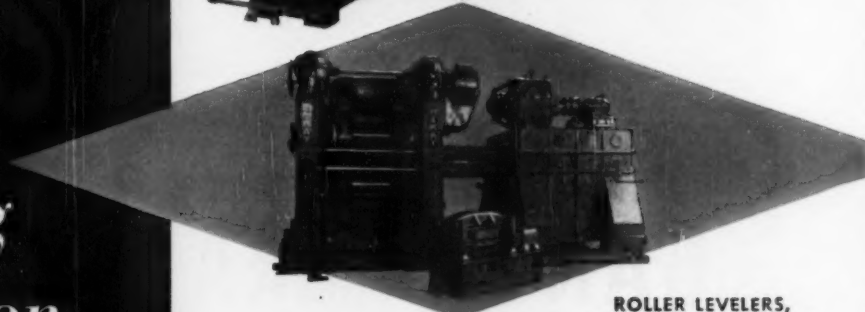
agitation oil pump, oil cooler, and control panel. The furnace automatically heats work to predetermined temperature, holds for time selected, and then moves work to the cooling quench chamber. With the quench selector set for oil the two stage pump will go to high circulation, work will lower into the controlled-temperature quench bath. The work will remain in quench for selected time and then raise to



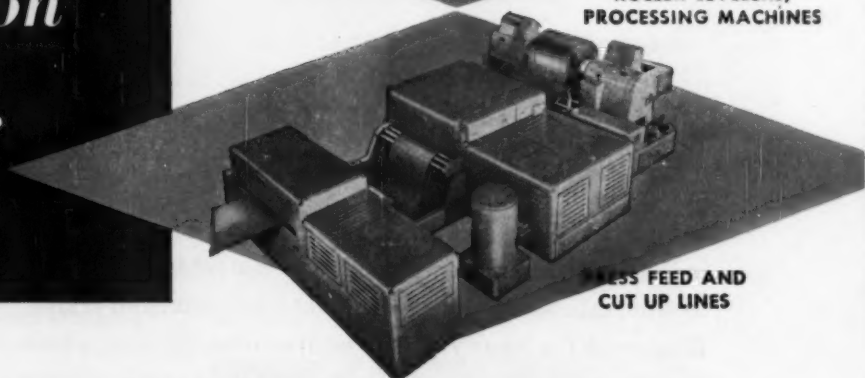
**TUBE MILLS AND
FORMING MACHINES**



**DRAW BENCHES
BAR AND TUBE**



**ROLLER LEVELERS,
PROCESSING MACHINES**



**PRESS FEED AND
CUT UP LINES**

Metal working Automation in action...

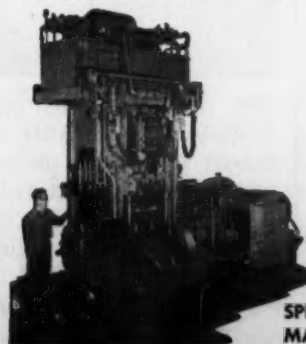
If you're in the metal working business, you should be acquainted with McKay *automated* lines available for many metal working operations.

McKay pioneered and has played a leading

role in the development of such equipment as that pictured on this page.

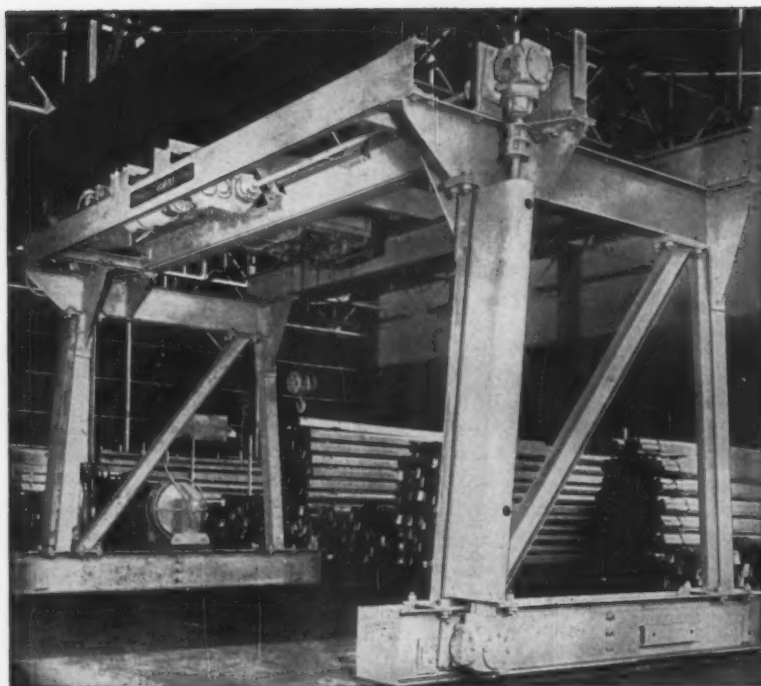
Basic McKay designs can be modified, or special machines developed to meet specific requirements.

THE MCKAY MACHINE CO., YOUNGSTOWN, OHIO



**SPECIAL
MACHINERY**





CHICAGO TRAMRAIL

GANTRY CRANES

At the modern plant of one of the country's largest aluminum companies, Chicago Tramrail Gantry Cranes handle long extruded pieces from a 14,000-ton extrusion press . . . transfer these pieces to other operations throughout the mill.

Fourteen Chicago Tramrail Full Gantry Cranes provide individual handling equipment for individual operations to eliminate waste time waiting for busy overhead cranes. Designed for heavy-duty, continuous service, these Gantries are built with maximum headroom and maximum clearance between legs to operate independently under the large overhead cranes.

For a practical, economical solution to your materials handling problems, see our experienced engineers. Special designs, sound engineering and broad application knowledge qualify us for helpful service.

CHICAGO TRAMRAIL CORPORATION

1312 S. Kostner Avenue • Chicago 23, Ill.

NEW EQUIPMENT

drain, ready for removal. (Hevi-Duty Electric Co.)

For more data circle No. 42 on postcard, p. 267

Mobile Welder

Self-contained and mobile, a new welder joins light-gage metal foils and sheets. Built on wheels, the resistance welding unit operates off either 110 or 220 line voltage. Its power rating is 2.5 kva, with a peak current rating of 100 amp in the welding transformer primary, providing peak power up to 50 kw. Welding rate may be set at any level between one and 20 pulses per second. (Vacuum Tube Products Co.)

For more data circle No. 43 on postcard, p. 267

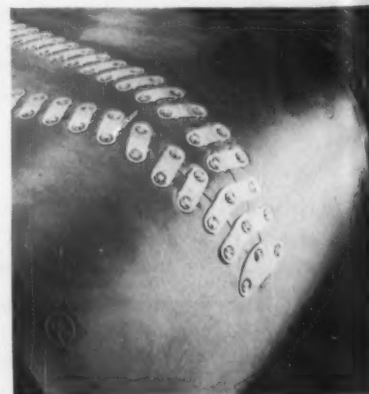
Lift-truck Weigher

A 5000 lb capacity weighing attachment for fork-lift trucks is accurate to 2/10 of 1 pct of its capacity. It's now available on a company's 3000, 4000 and 5000-lb trucks. (Clark Equipment Co.)

For more data circle No. 44 on postcard, p. 267

Belt Splice

A new field splice takes substantially less time and labor than a vulcanized splice. It's said to be equally dependable and long wearing for virtually every belt applica-

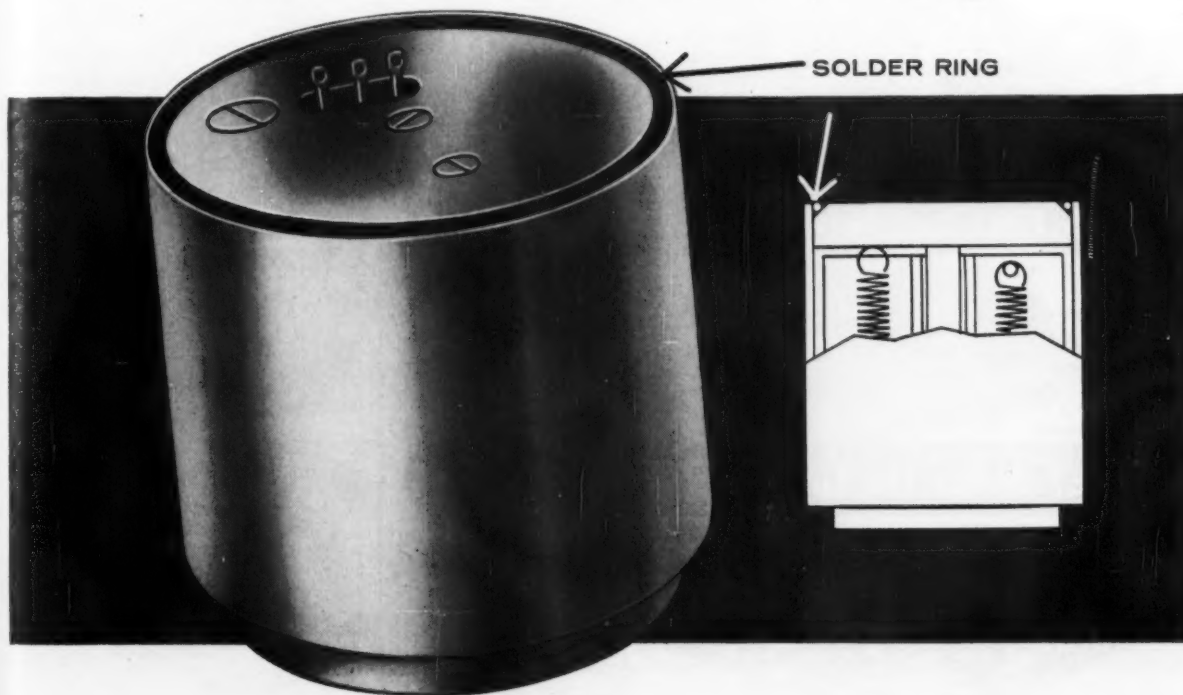


tion. The high-tension mechanical fastener splice consists of a V-shaped joint which forms a seal under tension. It's secured by special tip and tail fasteners. These are anchored at the extremities of two



Precision soldering 7 Times Faster...

with **TOCCO*** Induction Heating



When G. M. Giannini and Co., Inc., Pasadena, California, switched from old-fashioned methods to TOCCO Induction Heating they increased production of these high-precision accelerometers from 4 to 30 per hour—with a commensurate decrease in production costs.

Here's what a Giannini official has to say about the TOCCO installation: "Prior to using TOCCO for this purpose, we had tried soldering irons, normal torches, resistance sealing, and even threaded screw fittings, with uniformly poor results. Essentially, the TOCCO unit has permitted us to build, in production quantities, oil-filled hermetically sealed units that could not be produced in any other way."

Whether your production bottleneck involves soldering, brazing, heat treating or heating for forming it

pays you to investigate TOCCO as an economical way to do it better, faster and at lower cost.



TOCCO

THE OHIO CRANKSHAFT COMPANY

Mail Coupon Today— **NEW FREE Bulletin**

The Ohio Crankshaft Co. • Dept. A-1, Cleveland 5, Ohio

Please send copy of "Typical Results of TOCCO Induction Brazing and Soldering".

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Company _____

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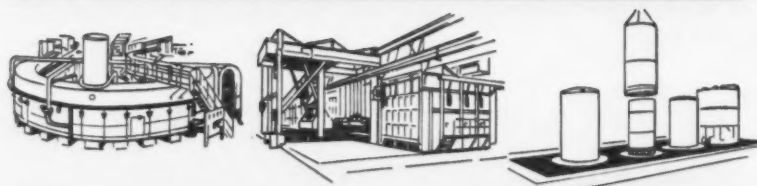
City _____

Zone _____

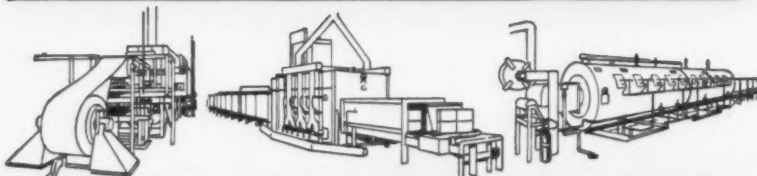
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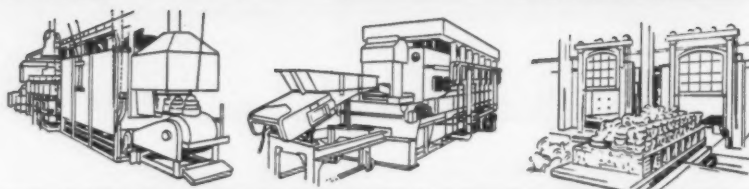
EF BUILDS ALL TYPES AND SIZES



GAS FIRED, OIL FIRED and ELECTRIC



EF Builds the Furnace to Fit the Job



No Furnace is Too Large or Too Unusual

We have the engineers, the experience, the research and experimental departments and the complete manufacturing and erection facilities to build the size and type required for any heat treating process.

Submit your production furnace problems to experienced engineers—it pays.



BULLETIN No. 461

shows typical installations of EF Gas-fired, Oil-fired and Electric Furnaces.

Send for a copy today!

THE ELECTRIC FURNACE CO.

GAS FIRED OIL FIRED AND ELECTRIC FURNACES
FOR ANY PROCESS PRODUCT OR PRODUCTION

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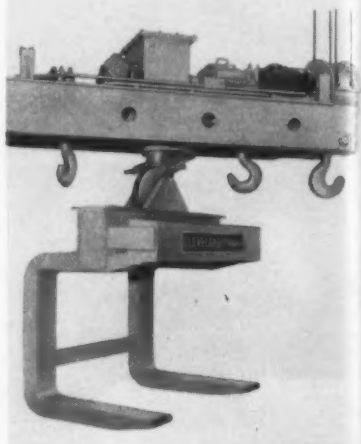
NEW EQUIPMENT

rows of bolt and plate fasteners. The splice applies on belts of natural or synthetic fabrics, cord construction, or any combination strength member construction with the exception of steel wire. (Manhattan Rubber Div., Raybestos-Manhattan, Inc.)

For more data circle No. 45 on postcard, p. 267

Crane Spreader

Several unusual crane spreader beams with power-driven rotating C-hooks have recently been fabricated. They've just gone into service at a prominent steel mill, handling ingots and heavy steel slabs. Each spreader beam has five hooks. The center hook can rotate without limit in either direction by a motor drive working through reduction gearing mounted on top of the beam. A slip device prevents damage to the drive.

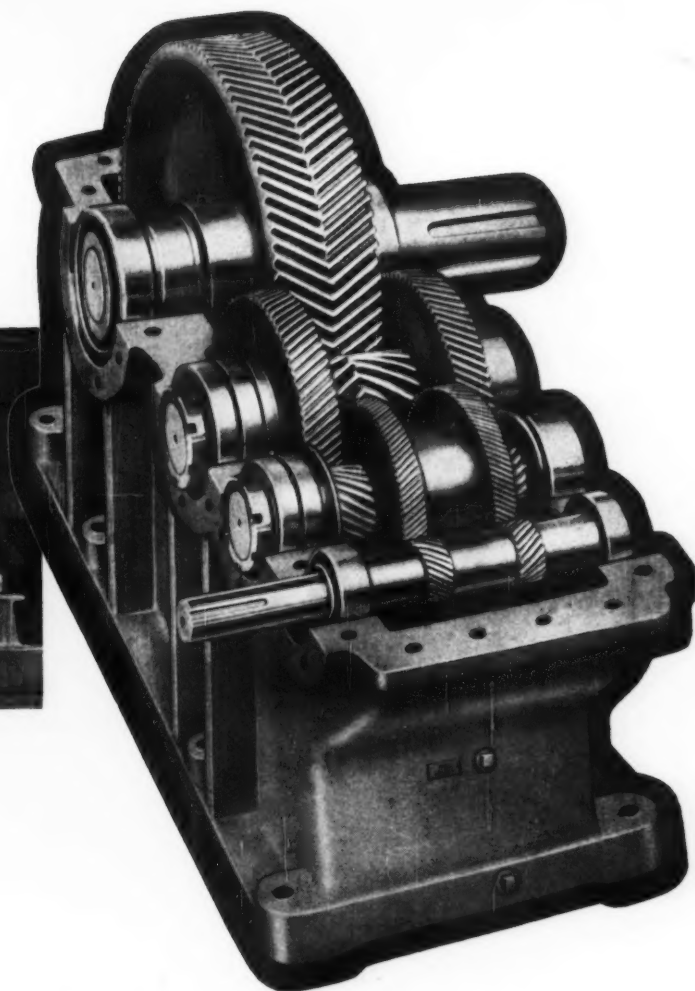
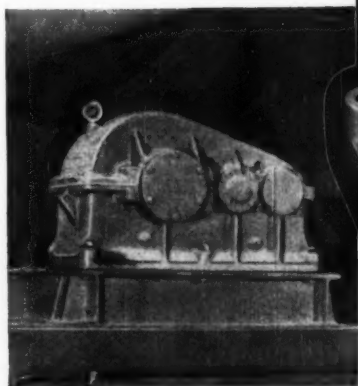


Two hooks next to the center can rotate 360° manually. The end hooks cannot turn, however, because they mount on pins, they can rock. All hooks except the middle one rate at 20-tons capacity. (Cleveland Crane & Engineering Co.)

For more data circle No. 51 on postcard, p. 267

Drilling Machine

For bench use, a new automatic precision drilling machine uses an air-hydraulic drill unit. This has a 1½-in. total stroke, adjustable for length of quick advance, feed rate, and total depth. Many spindle



THE HEAVIER THE LOAD . . . THE MORE YOU NEED PHILADELPHIA HERRINGBONE REDUCERS

Heavy repeated shock loads . . . high horsepower . . . round-the-clock operation . . . put them together and you have the kind of a job where Philadelphia Herringbone Reducers perform best. They will last longer and save your maintenance dollars because extra strength is built into every part . . . housings, shafting, bearings and gearing.

To be specific:

Housings are specially reinforced at points of greatest stress. Extra heavy bearings take shocks and heavy overhung loads in stride. Result: shaft alignment is accurate . . . and it stays accurate. Gears, pinions and bearings last longer.

To meet the specific needs of each application, gearing is specially designed and symmetrically arranged

in the housing. Result: the bearings on each shaft carry equal loads, shaft deflections are minimized, bearings and gearing have higher shock load capacity.

Pound for pound, horsepower for horsepower and dollar for dollar, you can't buy a herringbone reducer that will outlast a Philadelphia. They are designed with *your* heavy duty drive problems in mind . . . so that you will never have a drive problem.

Philadelphia Herringbone Reducers are available in single, double and triple reduction for ratios of 1.75:1 to 292:1. Write today for your copy of Catalog H-55.

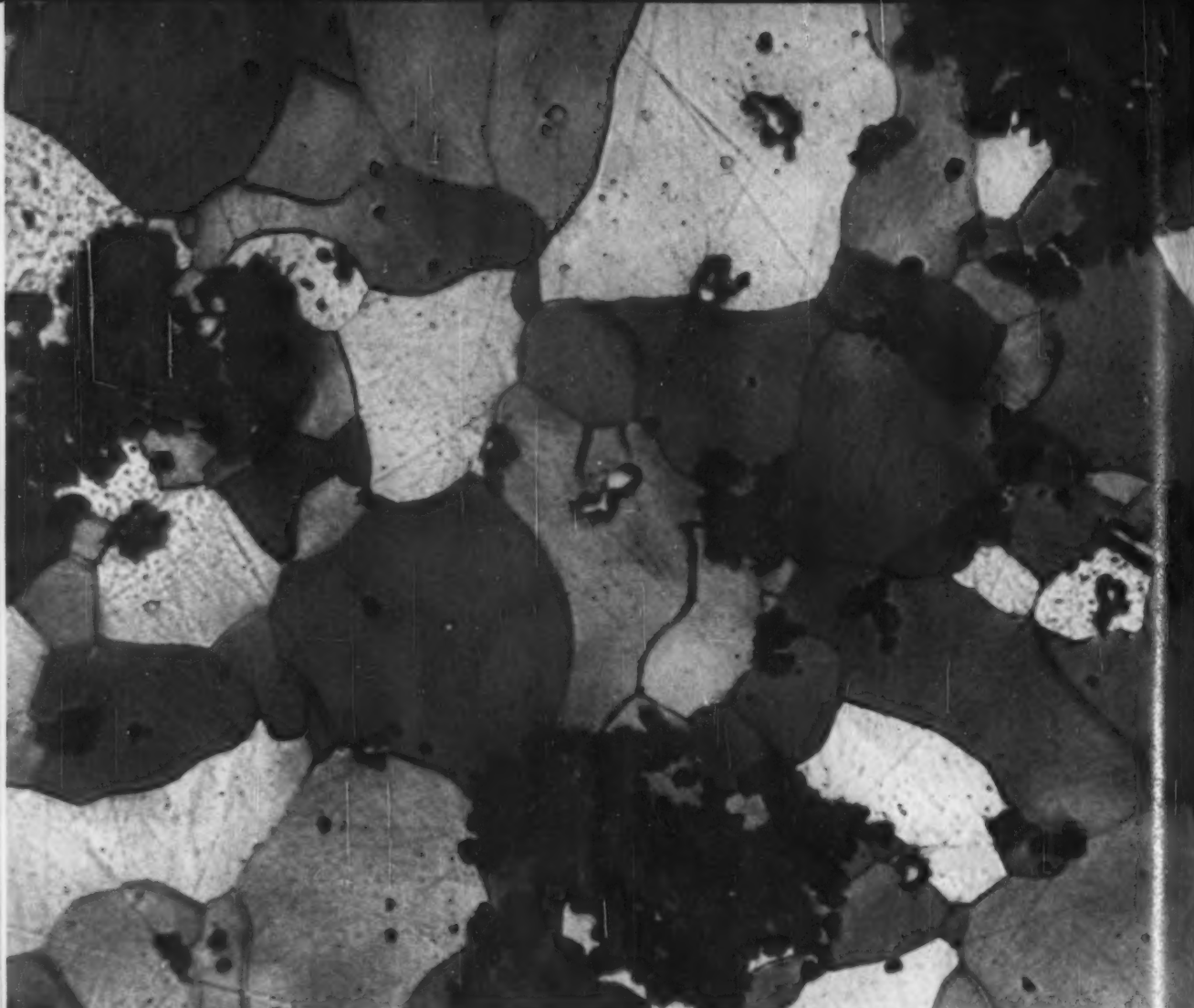
PHILADELPHIA GEAR CORPORATION

Erie Avenue and G Street • Philadelphia 34, Pennsylvania

philadelphia gear drives

Offices in all Principal Cities • Virginia Gear & Machine Corp., Lynchburg, Va.

INDUSTRIAL GEARS & SPEED REDUCERS • LIMITORQUE VALVE CONTROLS • FLUID MIXERS • FLEXIBLE COUPLINGS



Color micrograph of heat treated section of ferritic Malleable iron showing random dispersion of temper carbon nodules in ferrite. 625X magnification.

Usability is **Malleable**

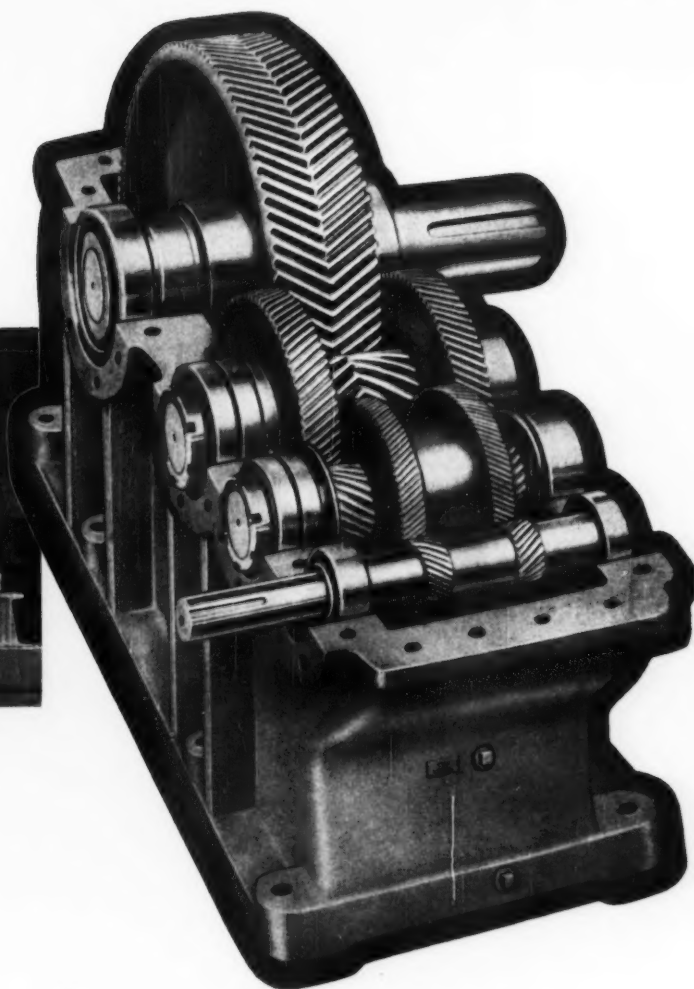
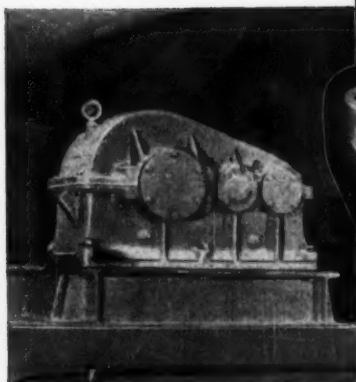
In the growing world of metals, certain requirements remain basic: strength . . . versatility . . . economy. Malleable iron castings uniquely answer all three. Malleable castings provide more strength per dollar than any other metal . . . are the most machinable of all ferrous metals of similar hardness.

From the great range of Malleable irons now produced in modern Malleable foundries, you can select exactly the right metal to fill your most demanding needs for endurance, resistance to impact and wear, ductility and constant uniformity. No other metal offers you so much at so low a cost.

For information or service, call on one of the progressive firms that identify themselves with this symbol—



If you wish, you may inquire direct to the Malleable Castings Council, 1800 Union Commerce Building, Cleveland 14, Ohio, for information.



THE HEAVIER THE LOAD . . . THE MORE YOU NEED PHILADELPHIA HERRINGBONE REDUCERS

Heavy repeated shock loads . . . high horsepower . . . round-the-clock operation . . . put them together and you have the kind of a job where Philadelphia Herringbone Reducers perform best. They will last longer and save your maintenance dollars because extra strength is built into every part . . . housings, shafting, bearings and gearing.

To be specific:

Housings are specially reinforced at points of greatest stress. Extra heavy bearings take shocks and heavy overhung loads in stride. Result: shaft alignment is accurate . . . and it stays accurate. Gears, pinions and bearings last longer.

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Pound for pound, horsepower for horsepower and dollar for dollar, you can't buy a herringbone reducer that will outlast a Philadelphia. They are designed with *your* heavy duty drive problems in mind . . . so that you will never have a drive problem.

Philadelphia Herringbone Reducers are available in single, double and triple reduction for ratios of 1.75:1 to 292:1. Write today for your copy of Catalog H-55.

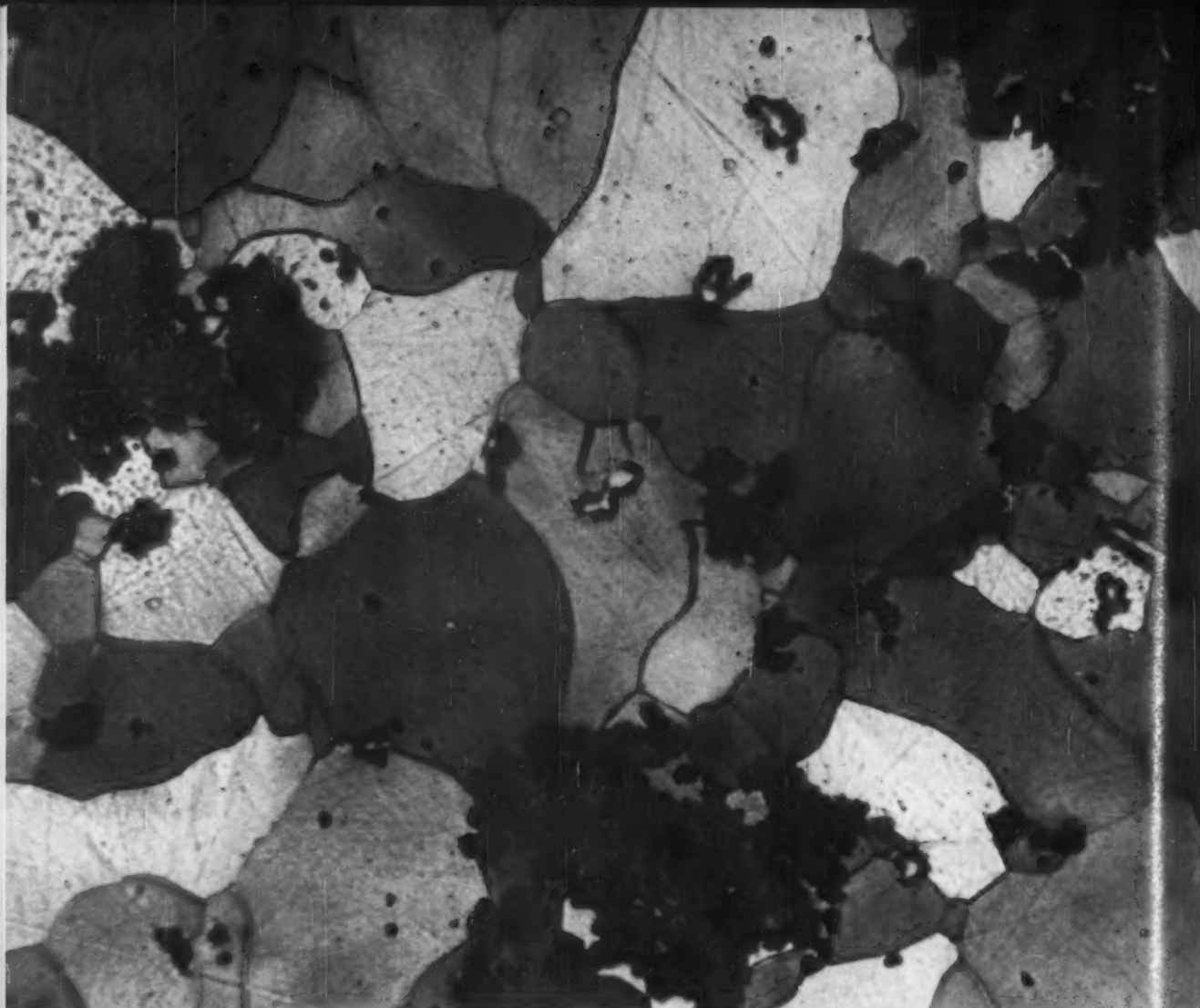
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INDUSTRIAL GEARS & SPEED REDUCERS • LIMITORQUE VALVE CONTROLS • FLUID MIXERS • FLEXIBLE COUPLINGS



Color micrograph of heat tinted section of ferritic Malleable iron showing random dispersion of temper carbon nodules in ferrite. 625X magnification.

Usability is **Malleable**

In the growing world of metals, certain requirements remain basic: strength . . . versatility . . . economy. Malleable iron castings uniquely answer all three. Malleable castings provide more strength per dollar than any other metal . . . are the most machinable of all ferrous metals of similar hardness.

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For information or service, call on one of the progressive firms that identify themselves with this symbol—



If you wish, you may inquire direct to the Malleable Castings Council, 1800 Union Commerce Building, Cleveland 14, Ohio, for information.

The

CON
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Laco

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Meel

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Acme
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New Haven Malleable Iron Co., New Haven 4

DELAWARE

Eastern Malleable Iron Co., Wilmington 99

ILLINOIS

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Chicago Malleable Castings Co., Chicago 43
Moline Malleable Iron Co., St. Charles
National Malleable and Steel Castings Co., Cicero 50

Peoria Malleable Castings Co., Peoria 1
Wagner Castings Company, Decatur

INDIANA

Link-Belt Company, Indianapolis 6
Muncie Malleable Foundry Co., Muncie
Terre Haute Malleable & Mfg. Corp., Terre Haute

MASSACHUSETTS

Belcher Malleable Iron Co., Easton

MICHIGAN

Albion Malleable Iron Co., Albion
Auto Specialties Mfg. Co., Saint Joseph
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Dayton Malleable Iron Co., Ironton Div., Ironton
Dayton Malleable Iron Co., Ohio Malleable Div., Columbus 16
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National Malleable and Steel Castings Co., Cleveland 6

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Erie Malleable Iron Co., Erie
Lancaster Malleable Castings Co., Lancaster
Lehigh Foundries Company, Easton
Meadville Malleable Iron Co., Meadville
Pennsylvania Malleable Iron Corp., Lancaster

TEXAS

Texas Foundries, Inc., Lufkin

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WISCONSIN

Badger Malleable & Mfg. Co., S. Milwaukee
Belle City Malleable Iron Co., Racine
Chain Belt Company, Milwaukee 1
Federal Malleable Company, West Allis 14
Kirsh Foundry Inc., Beaver Dam
Lakeside Malleable Castings Co., Racine
Milwaukee Malleable & Grey Iron Works, Milwaukee 46

How to Select the Best Metal to Perform a Given Set of Functions

Any equipment part can be described, at least approximately, in terms of the functions it must perform. That is, it must provide a certain strength plus resistance to wear, fatigue, impact or

corrosion. The finished part must provide the best combination of all necessary factors at the lowest possible cost — a cost that must include machining, finishing and assembly where applicable.

Unique Production Method Combines Desirable Characteristics

The amount and form of carbon in ferrous metals is of prime importance. The carbon content of Malleable iron (2.00 to 2.60%) provides good fluidity at the pouring stage. Yet neither flake graphite nor combined carbon is present in finished standard Malleable iron.

As the photomicrograph of standard Malleable iron shows, the carbon has been transformed into temper carbon nodules in a matrix of ferrite during the heat-treatment given *all* Malleable iron

castings. The result is a metal with a unique combination of high strength, toughness and machinability.

Pearlitic Malleable irons differ from standard, or ferritic, Malleable only in that a controlled amount of the carbon is combined with the iron to form a pearlitic matrix around the temper carbon nodules. This increases strength, hardness, wear resistance and modulus of elasticity, while retaining good ductility and machinability.

TENSILE PROPERTIES — A.S.T.M. MINIMUM SPECIFICATIONS

Standard and Pearlitic Malleable Irons				
Designation	Tensile Strength p. s. i.	Yield Strength p. s. i.	Elongation % in 2 in.	Ratio of Tensile to Yield %
Standard				
35018	53,000	35,000	18	66
32510	50,000	32,500	10	65
Pearlitic				
45010	65,000	45,000	10	69
45007	68,000	45,000	7	66
48004	70,000	48,000	4	69
50007	75,000	50,000	7	67
53004	80,000	53,000	4	66
60003	80,000	60,000	3	75
80002	100,000	80,000	2	80

Strengths up to 135,000 p.s.i. tensile and 110,000 p.s.i. yield are produced commercially under individual producers' specifications.

TYPICAL BRINELL HARDNESS NO. RANGES

Pearlitic Malleable Irons							
Designation	45010	45007	48004	50007	53004	60003	80002
B. H. N.	163-207	163-217	163-228	179-228	197-241	197-255	241-269

New Savings Result

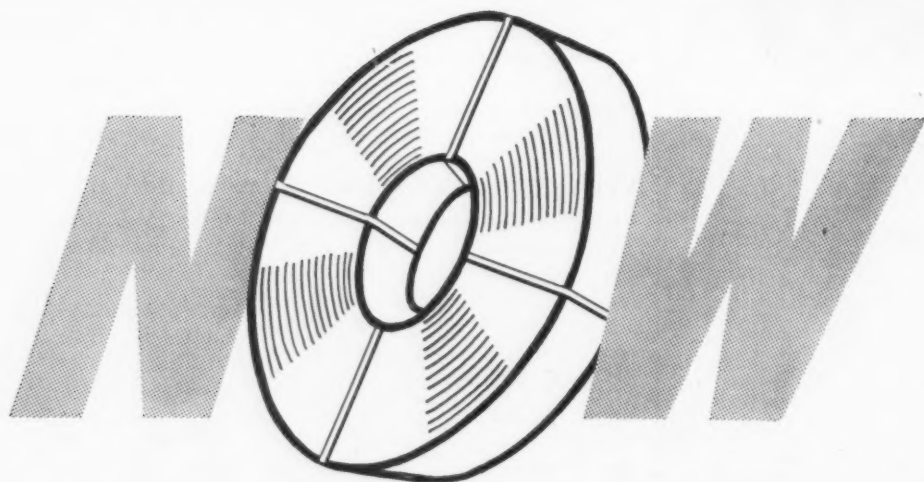
From the wide range of properties obtainable, a Malleable iron may be selected that will most completely meet ideal design and functional requirements. Because of the great latitude of producible sizes, from a fraction of an ounce to hundreds of pounds, Malleable can be used for a wealth of applications.

Malleable iron's economy is derived in two ways. First, the casting process is generally accepted as the most economical method of producing a finished part. Secondly, being the most machinable of all ferrous metals of similar hardness, cast or otherwise, Malleable iron castings provide exceptional economies in time, tool and power consumption.

Today's Malleable iron castings offer tremendous strength, uniformity, versatility and economy. The producers of Malleable castings are anxious to assist you in getting maximum "usability." Why not let their modern design, testing and production facilities work for you?

Send for Special Data Unit

Your copy of Data Unit No. 101 containing additional information on the benefits you can derive from Malleable iron castings is available from any member of the Malleable Castings Council. If you wish, you may direct your request to **Malleable Castings Council, Union Commerce Building, Cleveland 14, Ohio.**



CHASE IS ROLLING SHEET ALUMINUM

...and Chase as your aluminum source gives you all these advantages!

LONG EXPERIENCE — For years Chase has been rolling aluminum for special applications, along with other metals, giving Chase unrivalled non-ferrous metals experience...82 years working with metals!

LATEST EQUIPMENT for quality production and exacting production techniques assure close tolerance controls required in narrow-width rolling of aluminum for use in fin stock, in deep drawing, and spinning and in eyelet parts.

HUGE STOCKS of semi-finished aluminum at Chase Cleveland and Waterbury mills assure you quick delivery of coiled sheet to meet your exact needs.

DEPENDABLE SUPPLY — because Chase can draw on unlimited stocks of raw metal.


* * *

Talk over your requirements with your Chase District Office, or write Chase, Waterbury 20, Connecticut.

From 1/2" to 18" width in 90 to 110 lb./inch coils

Mill Stocks of These 6 Alloys On Hand In Waterbury and Cleveland Mean Quick Service

1100	3003	3004
5005	5050	5052

Chase 
BRASS & COPPER CO.
 WATERBURY 20, CONN.
 Subsidiary of
Kennecott Copper Corporation

THE NATION'S HEADQUARTERS FOR ALUMINUM • BRASS • BRONZE • COPPER • STAINLESS STEEL
 Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York (Maspeth, L. I.) Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

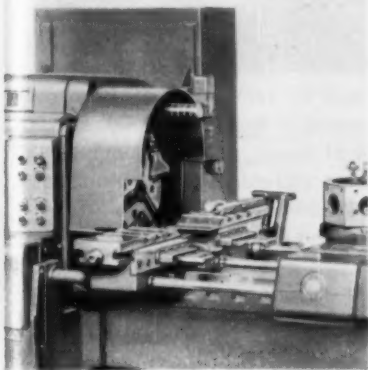
NEW EQUIPMENT

speeds are possible through the pulley drive arrangement. The unit mounts on a sliding base with 4-in. end adjustment. It's compact, only 12-in. wide, 21-in. long, 30-in. high. (Hartford Special Machinery Co.)

For more data circle No. 52 on postcard, p. 267

Turret Lathes

Completely new automatic turret lathes employ a selector-switch control panel. This reduces set-up time 50 pct or more. The operator need only chuck the piece, start the automatic cycle and remove the com-

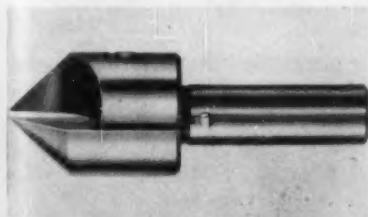


pleted part. Human error is eliminated. During the machine cycle the operator is free to handle additional units or perform other work. Quickly and easily set up, there are no cams to change. It is suited for long or short run operations. (Gisholt Machine Co.)

For more data circle No. 53 on postcard, p. 267

Countersink

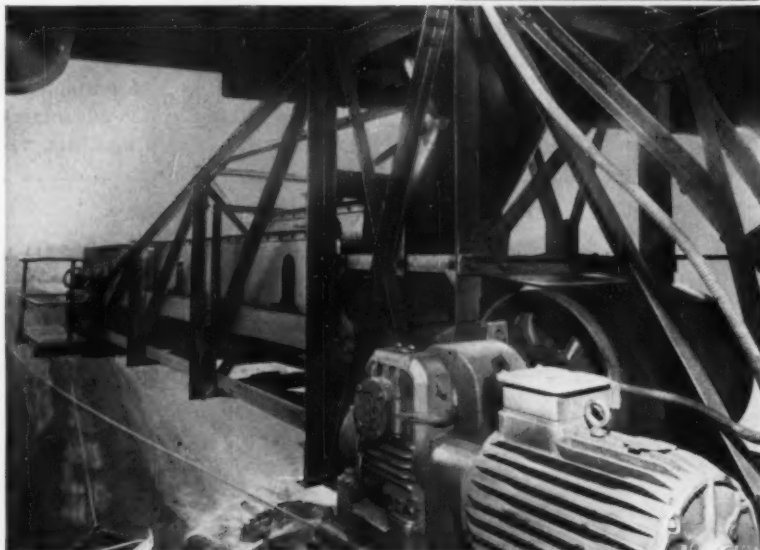
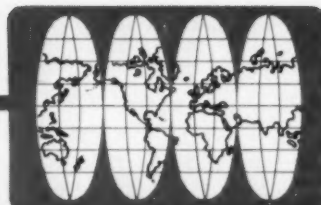
Easy-sharpening, this countersink gives burr-free, chatterless performance in a wide range of materials, metal or plastic. Sharpening is sim-



ple, using a straight cylindrical grind similar to grinding a lathe center. There are no relief clearance angles to contend with. Of high

DAVID BROWN

at work
around the world



Radicons drive coal feed conveyors at one of England's largest power plants

WHY O.E.M. INSTALLATIONS ACCOUNT FOR 85% OF RADICON SALES

In Europe, Africa, South America, Australia, Canada and the U. S., Radicon speed reducers are harnessing motor speeds into working power for all industry.

From missile launchers to supermarket check-out counters, product design engineers have come to know the important 1-2-3-4 reasons why Radicons are specified on so many different industrial applications—and why OEM installations account for 85 percent of the David Brown Radicon sales.

- 1. PRICE**—The original equipment manufacturer is always fully protected on the industry's accepted discount, and Radicon drives are still competitively priced at the user level.
- 2. RELIABILITY**—Trouble-free operation under all operating extremes.
- 3. PRODUCT LINE**—A Radicon in the size, type and ratio for every job.
- 4. DELIVERY**—Off-the-shelf on Radicons in 14 sizes, 1 1/8" to 14", 8 types, 17 ratios from 5:1 to 250:1.

Get the details on the cooperative service of David Brown companies around the world—on the next installation!



DAVID BROWN, INC.

(one of the David Brown Industries)

999 Beecher Street, San Leandro, California
6025 Atlantic Blvd., Maywood, California
1224 S.W. Morrison St., Portland, Oregon

NEW EQUIPMENT

quality high speed steel, the tool is solid, in one-piece; a slot cut back from the tip of the cone forms two cutting edges. (Madison-Relco Tool Co.)

For more data circle No. 54 on postcard, p. 267

Floor Material

Without corroding, a new flooring

withstands up to 50-pct inorganic acid conditions. The tough material resists hot concentrated alkaline solutions up to 170°, nitric acid up to 15 pct and highly concentrated sulphate solutions. (Stonehard Co.)

For more data circle No. 55 on postcard, p. 267

Paint Heater

Carried by its operator, this paint heater is compact and portable. It provides all hot spray advantages (i.e., eliminating runs and sags, re-

ducting overspray, one coat needed in place of two). The unit combines a high wattage heating setup with a plastic-insulated case. It's comfortable for the painter since he

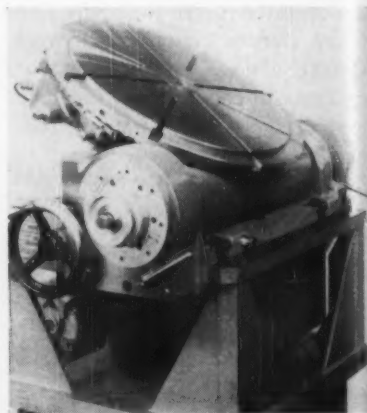


feels no external heat. Electrically operated from 120-v ac standard light circuit, it comes complete with hose and electric cable set. It's explosion-proof. (Spee-Flo Co.)

For more data circle No. 56 on postcard, p. 267

Gyroscope Calibrator

This tilting rotary table provides a stationary platform divorced from the Earth's rotation for calibrating and testing navigational gyroscopes.



It places the instrument in the same environment that would exist if the instrument were resting on a stationary platform out in space. (Pratt & Whitney Co., Inc.)

For more data circle No. 57 on postcard, p. 267

Swarfing Mill

For swarfing joining edges of parts or sub-assemblies having com-

MicroRold®

stainless steel
soars with

ATLAS ICBM

on first
full range flight!

U. S. missile program one step nearer to complete operational capability.

On the evening of November 28, 1958, a 100-ton ATLAS lifted from its pad at Cape Canaveral and arched majestically into the heavens. 30 minutes later its nose cone shot into the Atlantic, marking the first successful completion of its fully-programmed distance of 6300 statute miles.

The main part of the ATLAS structure is literally a huge fuel tank, the shell of which is thin gauge MicroRold stainless steel. Important factors in selection of stainless steel for the outer skin of the ATLAS are—great strength at both high and low temperatures, resistance to corrosive exotic fuels and good workability.

The stainless skin, supplied exclusively by Washington Steel, requires extremely close control of mechanical properties and gauge tolerance which are regularly produced through Washington Steel's long experience with precision rolling equipment.

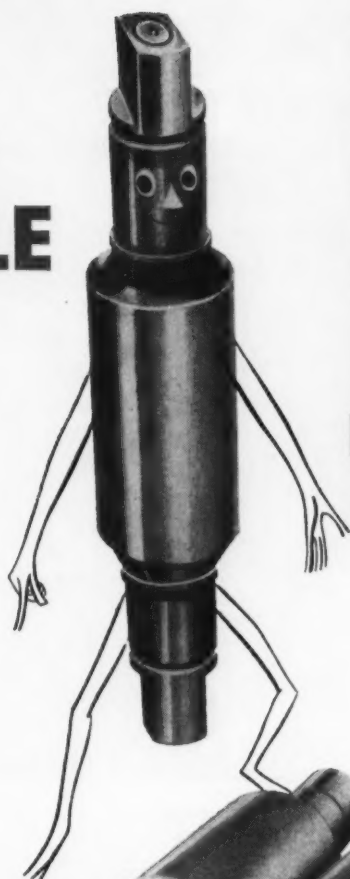


WASHINGTON STEEL CORPORATION

1-1 WOOD AND A GRIFFITH AVENUES

WASHINGTON, D. C.

Introducing *Hyde Park's* MISTER **RED CIRCLE**



66" x 385" Sheet
Stretcher Leveller



Machine Tool
Base Plate

ROLLS

Nickel Alloy Grain Rolls
Grain Rolls
Chilled Rolls
Nickel Chilled Rolls
Moly Rolls
Nodular Iron Rolls
All Grades Nickel Alloy Iron
Rolls for Hot and Cold Rolling

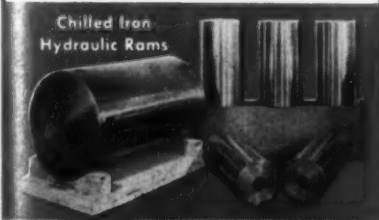
ROLLING MILL EQUIPMENT

Bar Mills
Merchant Mills
Roller Tables
Sheet Mill Shears
Special Machinery
Sheet and Strip Mills
Pinion Stands
Reduction Drives
Roll Lathes
Machine Work

CASTINGS

Furnace Castings
Heavy Die Castings
Bases
Housings
Machinery Castings
Slag Pots
Heavy Tool Castings
Floor Plates

Chilled Iron
Hydraulic Rams



18 Inch 3 High
Bar Mill Stand



Gray Iron Castings

No Production Headaches with Red Circle Rolls

The Red Circle on Hyde Park Rolls is your assurance of perfect performance and long service—factors that make for increased tonnage and greater economy of production.

Look to Hyde Park for the best in Rolls, Rolling Mill Equipment and Gray Iron Castings.



Hyde Park

FOUNDRY and MACHINE CO.

HYDE PARK, WESTMORELAND COUNTY, PITTSBURGH DISTRICT, PA.



**"Accurate control assures
continuous bright copper brazing"
—reports Amphenol**

Amphenol Electronics Corporation, Chicago, uses this Hevi-Duty furnace for brazing copper to electronic components at 2050° F. Components move on a variable speed conveyor through two heating zones in a rich 6-to-1 exothermic atmosphere.

Atmosphere is supplied to the furnace by a Hevi-Duty Gas Preparation Unit. The correct mixture of gas is controlled by a single, simple adjustment and maintained automatically regardless of volume desired.

Excellent control of temperature, as well as atmosphere, helps maintain the bright, clean finish characteristic of Amphenol products, and demonstrates once again that *it takes quality to make quality*.

For complete information on Hevi-Duty Mesh Belt Conveyor Furnaces, write for Bulletin 357.

- Heat Processing Furnaces
- Dry Type Transformers
- Constant Current Regulators



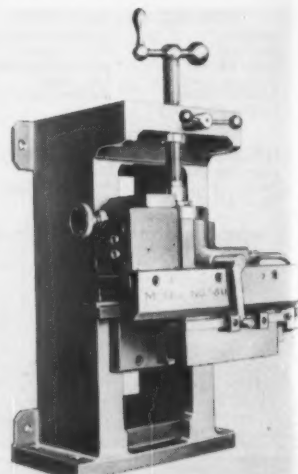
NEW EQUIPMENT

pound surfaces, a new machine combines versatility and efficiency of hydraulic drive with speed and ease of manual stylus control. Many "fail safe" features protect the operator and eliminate chances for costly scrap. The machine comes in sizes 30 x 24 in., 36 x 24 in., and 42 x 24 in., with rated stroke lengths of 6, 8, 10 or 12 ft. (Rockford Tool Co.)

For more data circle No. 58 on postcard, p. 267

Marking Unit

For hydraulic roll marking, a new marker comes with or without a hydraulic power unit. It's also available mounted on a base. It mounts right side up, upside down, sideways, or at any angle, at any loca-



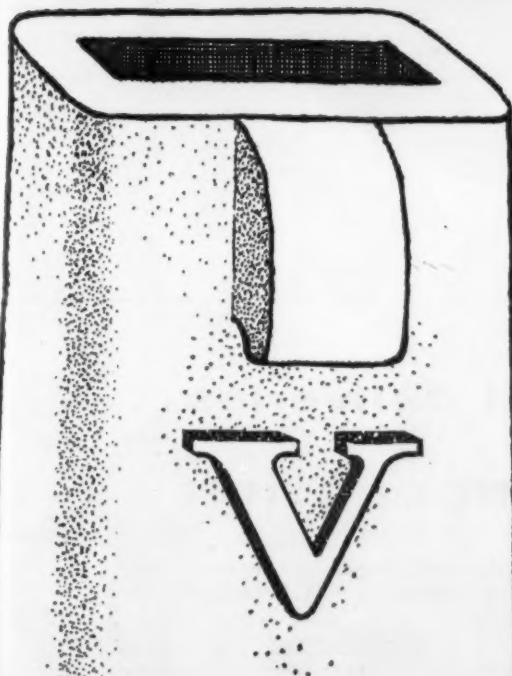
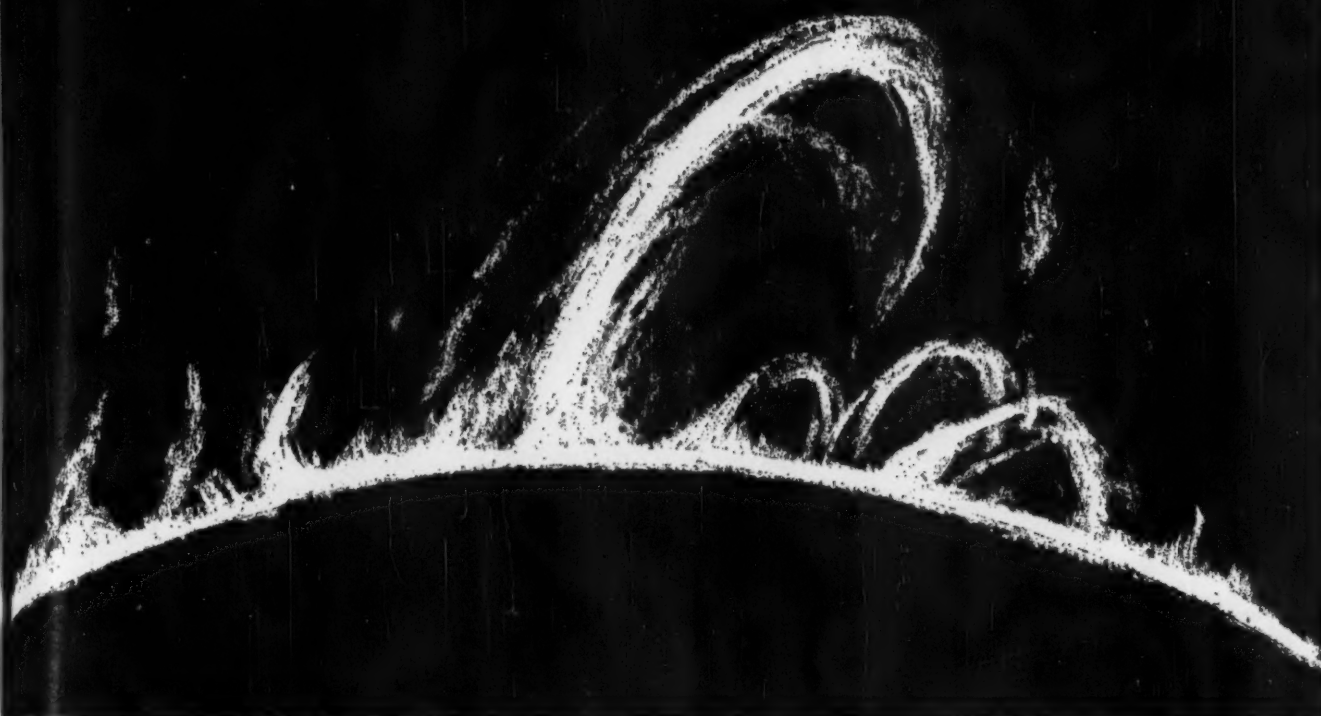
tion. Compact in size, it's only 1-ft sq. Initial cost and operating costs are low. The setup marks parts while in a fixtured position on rotary feed tables and other automated setups. (Cadillac Stamp Co.)

For more data circle No. 59 on postcard, p. 267

Abrasive Belt

Air-operated attachments can now convert any polishing and buffing head unit or lathe to accommodate abrasive belts in addition to wheels and buffs. When used with belts, a contact wheel mounts on the head or lathe spindle; the belt slides over this wheel and the attachment idler pulley. (Devine Brothers Co.)

For more data circle No. 60 on postcard, p. 267



Tomorrow

we'll harness the energy of the sun

but even then

steel will be poured into

VALLEY

INGOT

MOULDS

VALLEY MOULD AND IRON CORPORATION

GENERAL OFFICES: Hubbard, Ohio
WESTERN OFFICE: Chicago, Illinois
NORTHERN OFFICE: Cleveland, Ohio



Ingersoll Steel Deliveries

TIMED TO YOUR PRODUCTION

Here at Ingersoll Steel we knock ourselves out to give you on-time, as-promised delivery of a wide variety of special purpose steel sheets and plates. The minute your order is received it starts getting the V.I.P. treatment—and that's the way it goes all the way to your receiving department.

Being a specialty mill, we can and do adjust our production schedules to dovetail with your production needs. And with our advantageous central location at New Castle, Indiana, prompt deliveries

are assured. Next time you need any of the products listed below, call Ingersoll Steel and you'll see what we mean.

Ingersoll Produces:

STAINLESS STEELS • HEAT RESISTING STEELS • INGLACED
STAINLESS-CLAD SHEETS • ALLOY STEELS • FORGING QUALITY
ELECTRIC STEEL INGOTS • AUTOMOTIVE CLUTCH PLATE STEELS
TEM-CROSS CROSS-ROLLED STEEL • CARBON ELECTRIC STEEL
FOR TRACTOR CLUTCH DISCS • KNIFE STEELS • SAW STEELS
HIGH SPEED HACK SAW STEELS • SOFT CENTER AND OTHER
AGRICULTURAL STEELS • SPECIAL ANALYSIS STEELS



Ingersoll STEEL DIVISION
Borg-Warner Corporation
New Castle, Indiana

S
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7

High Production of Automobile Crankshaft Forgings on AJAX High Speed Forging Presses

Production
More than Doubled
Over Former Methods
on 6000 Ton
Ajax Forging Presses

Crankshafts
With Less Draft
on Counterweights
for Lower Machining
Costs

For Your
Forging Needs . . .
Ajax Forging Presses
Sizes 300 Ton
to 8000 Ton



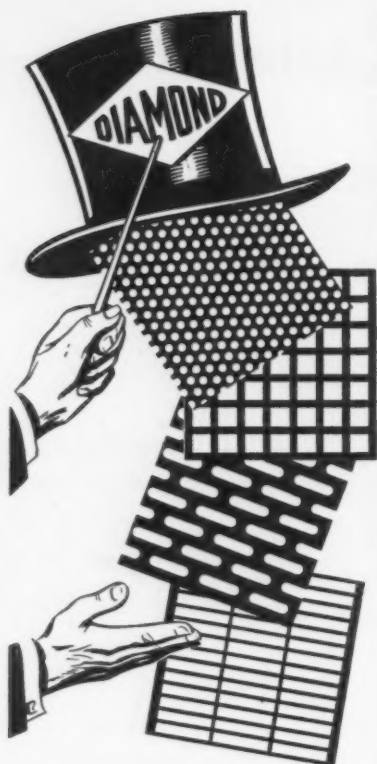
THE **Ajax** MANUFACTURING
COMPANY
CLEVELAND 17, OHIO

110 S. DEARBORN ST., CHICAGO, ILL.

W. P. WOOLDRIDGE CO.

1209 BURLINGAME AVE., BURLINGAME, CAL.
6440 FLEET ST., LOS ANGELES 22, CAL.

Write for Bulletin 75 C



Top-Hat Quality IN Perforated Metal

The popular Diamond Perforated-metal patterns shown above are only a few of the many illustrated and described in our 32-page Catalog No. 39. All of these standard patterns are available in a wide range of unit-opening sizes and we are always equally pleased to quote on original designs of any type or size.

Catalog 39 also illustrates and describes our high-quality lines of *Ornamental Cane*, *Perforated-Metal Sheets* for Acoustical installations and *Heavy-Duty Architectural Grilles*. Write, today, for a free copy.

Correspondence is especially invited regarding ANY requirement for perforated-metal panels or parts. We are equipped to fabricate special sections to any desired extent and welcome opportunities to make money-saving suggestions.

DIAMOND MFG. CO.
WYOMING WILKES BARRE PA.

Manufacturers of DIAMONTEX, the Perforated Metal Lay-in Panel for better Acoustical Ceilings. New Bulletin No. 47 gives complete illustrated information. Write for free copy.

FREE TECHNICAL LITERATURE

New Catalogues And Bulletins

Money-saving products and services are described in the literature briefed here. For your copy just circle the number on the free postcard, p. 267.

Refractory Metals

How a new vacuum furnace production heat-treats refractory metals used in nuclear reactors, electronic components, and rocket engines is explained in a bulletin. (C. I. Hayes, Inc.)

For free copy circle No. 61 on postcard, p. 267

Foundry Tool

A 9-page booklet discusses a solid materials dispensing unit's use in the treatment of molten metals. Solid materials ride an inert carrier gas. (National Cylinder Gas Div., Chemetron Corp.)

For free copy circle No. 62 on postcard, p. 267

Electronic Voltmeter

All-transistor designed, a direct-current electronic voltmeter is outlined in a data sheet. (Consolidated Electrodynamics Corp.)

For free copy circle No. 63 on postcard, p. 267

Teflon

Teflon laboratory products are listed in an 8-page bulletin as low in price. (Kontes Glass Co.)

For free copy circle No. 64 on postcard, p. 267

Wire Insulator

High speeds are reported in a 4-page bulletin for a new wire insulat-

ing extruder. This machine triples production of Teflon-insulated wire. (Jennings Machine Corp.)

For free copy circle No. 65 on postcard p. 267

U. S. Rust Index

Listing rates which metal rusts for each of 523 U. S. cities is a new "rust index." (For free copy write on company letterhead to Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.)

Presses

Just published is a 44-page bulletin introducing redesigned straight side single and double crank presses. Capacities run from 50 through 500-tons. (Niagara Machine & Tool Works.)

For free copy circle No. 66 on postcard p. 267

Handler Leasing

Methods of leasing materials handling equipment are described in a 4-page circular. (Lewis - Shepard Products, Inc.)

For free copy circle No. 67 on postcard, p. 267

Motor Base

A catalog sheet introduces a new sliding motor base. Of welded steel construction, it has a quick release adjusting screw. It's applicable for variable pitch drives which require more take-up than normal V-drives. (Browning Mfg. Co.)

For free copy circle No. 68 on postcard, p. 267

Industry Optics

Where visual inspection, comparison, checking or measurement is important, a 96-page catalog may prove a valuable guide to equip-

ment. Listed are hundreds of quality control aids. (Edmund Scientific Co.)

For free copy circle No. 69 on postcard, p. 267

Constant Temperature

The 60 pages of a new "constant-temperature" catalog describe baths, conditioned-air devices and temperature-humidity cabinets. Over 100 constant-temperature instruments are listed. (American Instrument Co.)

For free copy circle No. 70 on postcard, p. 267

End Mills

Carbide-tipped shell end mills are detailed in a bulletin. Drawings illustrate how a special tooth design and streamlined milling body reduce regrinding time and cost and assure longer tool life. (Sandvik Steel, Inc.)

For free copy circle No. 71 on postcard, p. 267

Metal Framing

An all-purpose bolted metal framing system is covered in a 180-page publication. Illustrations show over 1400 fittings. (Unistrut Products Co.)

For free copy circle No. 72 on postcard, p. 267

Lift Truck

Engineering, design and construction of a recently introduced 2000-lb capacity, 35-hp lift truck highlight an 8-page catalog. (Allis-Chalmers Mfg. Co.)

For free copy circle No. 73 on postcard, p. 267

Die Steel

Free machining air-hardening die steel is analyzed in a technical sheet. The steel applies to blanking and forming punches, dies and rolls; trimmer dies, cold or hot; plastic molding dies; straightening and bending dies; and gages. (Allegheny Ludlum Steel Corp.)

For free copy circle No. 74 on postcard, p. 267

Precision Sorter

A data sheet describes a precision sorter. This unit gages and sorts up to 300,000 parts an hour. Ac-



A-W Hydraulic Crane quickly and easily removes this 6000-lb.-engine and propeller assembly on a Delta Air Lines DC-7.

Versatile Austin-Western Hydraulic Crane speeds aircraft engine changes . . . saves Delta 1000 man-hours yearly

Delta selected the Austin-Western Hydraulic Crane as the outstanding materials handling machine to meet its exacting requirements for maneuverability and load, reach and boom clearance capacities.

Maneuverability important

All-wheel drive and all-wheel steering make the A-W 5-ton crane, with basic 18-ft. telescoping boom, a highly versatile piece of materials handling equipment.

In providing periodic inspection, maintenance and overhaul on its fleet of 73 aircraft, ranging from Super Constables to DC-6, DC-7 and DC-7B's, Delta changes an average of more than 50 engines each month. It is estimated that use of the A-W crane saves 1000 man-hours annually on engine and propeller changes alone!

To Delta, the biggest single advantage of the A-W crane is its maneuver-

ability around parked aircraft, maintenance stands and equipment. With all-wheel steering, the A-W can make a 90° turn in less radius than its own length. The boom rotates a full 360° for fast front, rear or over-the-side pickup or unloading.

A dependable precision tool

A-W dependability makes work scheduling easier, speeds aircraft back to operational status. Delta has discovered many uses for this all-purpose hydraulic crane in its operations. It is a precision tool that does work faster and easier, with less operator fatigue.

Learn now why men responsible for materials handling everywhere are so enthusiastic about this hardworking new hydraulic crane. See your nearby A-W distributor or write us today for complete information.

Austin



Western

BALDWIN • LIMA • HAMILTON

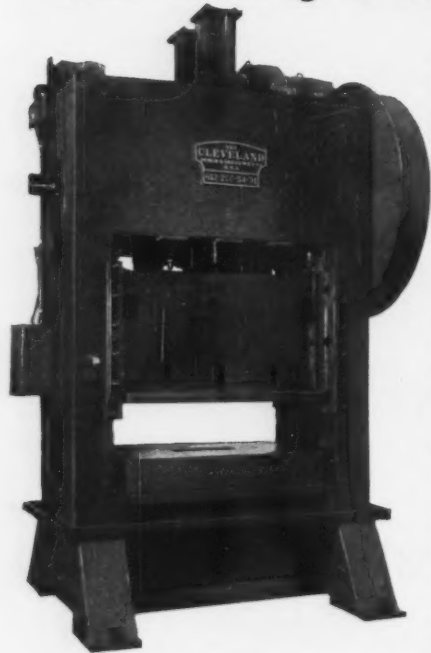
Power graders • Motor sweepers • Road rollers • Hydraulic cranes



For Greater Economy In Metalworking

CLEVELAND

Cost-Cutting PRESSES



Cleveland high-speed Double Eccentric Press, 200-ton capacity, operates at 50 to 150 strokes per minute for high-speed punching, shearing, perforating, bending and forming.

Are production break-downs, slow outmoded presses and mounting maintenance costs destroying your profits? A check of your press performance records may show you're already paying for new presses . . . *without their benefits.*

For lower operating costs, quicker starting, increased production, investigate the new minimum-maintenance Cleveland Presses. Our engineers are ready to help you plan a program of replacing old inefficient presses with modern cost-cutting Cleveland Presses of the exact type, size and capacity to meet your need.

You get better stampings for less with a Cleveland Press.



Cleveland's cost-cutting Single Eccentric Press, 350-ton capacity, operates at 60 strokes per minute, has air-counterbalanced slide and auxiliary air brake on flywheel.

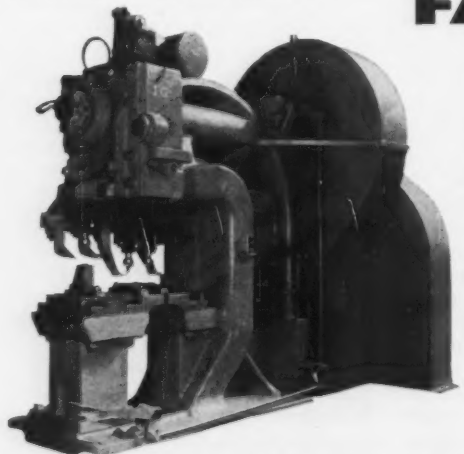
FABRICATING TOOLS

For Plate and Structural Steel

Ruggedly built for profitable production and simplicity of operation, Cleveland Fabricating Tools are designed for trouble-free operation and years of service—a fact proven by leading shipyards, bridge builders, railroads, structural shops and boiler makers since 1880.

For punching, coping, notching, shearing, bending and planing I-beams, steel plate, bars, angles and other structural shapes, you can do it better, more economically with Cleveland Fabricating Tools. Write for Catalog #9 to help you determine the correct tool for your needs.

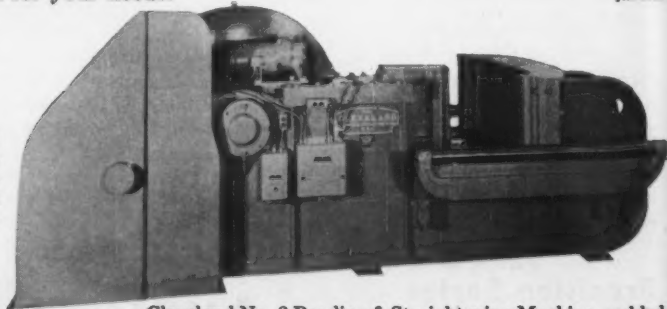
AA-9106



Cleveland I G Beam Punching Machine equipped with 3 gaged punching attachments, one high and two low die holders, 24" throat, completely enclosed gears and flywheel, punching capacity: standard 6" to 24" I-beams in flange and web. Other capacities and sizes available.



E. 40th and St. Clair Avenue, Cleveland 14, Ohio



Cleveland No. 2 Bending & Straightening Machine, welded steel frame, completely enclosed gears and flywheel, arranged for direct-drive motor and equipped with power adjustment to plunger through separate motor. Capacity: bend or straighten 24" I-beams vertically or horizontally.

AMBALLOY A. M. BYERS ELECTRIC FURNACE QUALITY STEEL PRODUCTS

How Byers' metallurgical control program helps specialty steel users

Quality-assurance provisions guard the uniformity, cleanliness and physical properties of Amballoy specialty steels. From raw material selection to delivery, a close-knit program of metallurgical control assures adherence to your most exacting requirements.

The entire Byers operation—size, personnel, furnace practice, laboratory analyses—has the flexibility required to follow through each heat, every step of the way. No once-over lightlies, ever.

We're talking about follow-through with magnetic

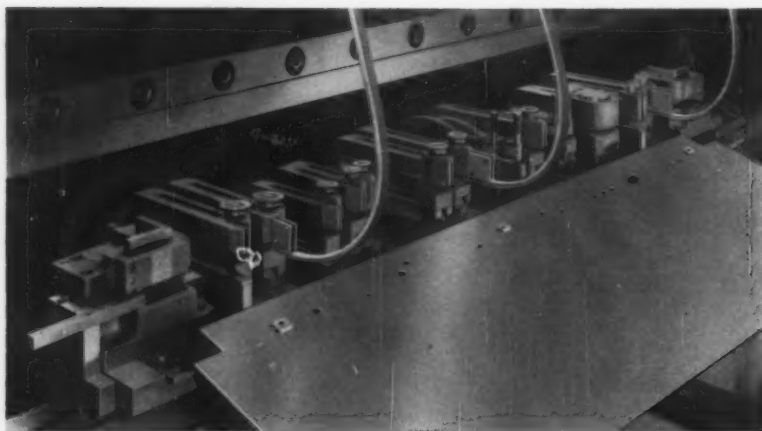
particle inspection. Supersonic reflectoscope testing. Determination of inclusion content. Sampling. Quantitative expression of results. We're riding herd on quality—in this phase—and every other phase of our steel-making process.

You have every assurance that our high-grade specialty steels—alloy, stainless and carbon—will be tailor-made to *your* requirements. We'd like to talk with you about them. Call ATlantic 1-8110 or write: A. M. Byers Company, Clark Building, Pittsburgh 22, Pennsylvania.

Metallurgical control, every step of the way **A. M. BYERS COMPANY**

NEW STRIPPIT UNITS

... stake nuts permanently
with every press stroke!



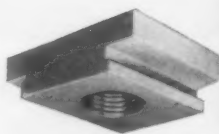
STRIPPIT PIERCE NUT UNITS save operations, time and money in assembly panel production with single-stroke insertion of Fabristeel Multipierce Nuts* into sheet metal up to .125" thick.

Permanent Fastening by an Exclusive New Process—as nut pierces stock, metal flows into nut shoulder slot, becoming an integral part of the stock.

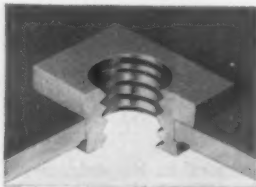
High-Speed—fast press setups, automatic feed of nuts to units for long, medium or short runs gets maximum production per press.

Flexibility—Pierce Nut Units can be quickly press-mounted in any desired pattern, changed on short notice, re-used over and over.

*A Product of Fabristeel Products, Inc.



Each nut is its own punch,
a new one each time



Die button causes material
to flow into nut slot



Simultaneous embossing
for flush fastening

WRITE FOR DEMONSTRATION on your press! The speed and simplicity of Strippit Pierce Nut operation has to be seen to be believed. Also request new catalog for complete specifications.

WALES STRIPPIT INC.

202 Buell Road, Akron, New York

In Canada: Strippit Tool & Machine Company, Brampton, Ontario



FREE LITERATURE

curacy is ± 0.0003 in. (U. S. Engineering Co.)

For free copy circle No. 75 on postcard, p. 267

Thermatron

Continuous measuring of one gas in multi-component mixtures is performed by a new instrument. A bulletin describes the Gas Thermatron and explains its use. (Mine Safety Appliances Co.)

For free copy circle No. 76 on postcard, p. 267

Pipe Handling

How a firm avoids \$30,000 annual labor costs is told in a 4-page report. The company saves this by utilizing three straddle carriers to handle and move steel pipe. (Clark Equipment Co.)

For free copy circle No. 77 on postcard, p. 267

Electron Optics

Electron optical instruments are covered in a 16-page booklet. Sections are devoted to electron microscopes, an X-ray microscope, and a contact micro-radiographic unit. (Philips Electronics, Inc.)

For free copy circle No. 78 on postcard, p. 267

Microinches to Angles

For engineers who calculate to the sixth decimal point, a pocket-size chart immediately converts small angles (from one second to one minute) to microinches per inch, per 10 in., and per foot. It also shows linear measure from one microinch to 0.005 in. in terms of minutes, seconds and fractional seconds, per inch, per 10 in. and per foot. (Engis Equipment Co.)

For free copy circle No. 79 on postcard, p. 267

Dip Tanks

All-steel dip and rinse finishing tanks are outlined in a bulletin. Two water and two oil tanks shown are 24-in. deep, 24-in. long and 16-in. wide. Maximum capacity: 40-gal (Techline Div., Wheelabrator Corp.)

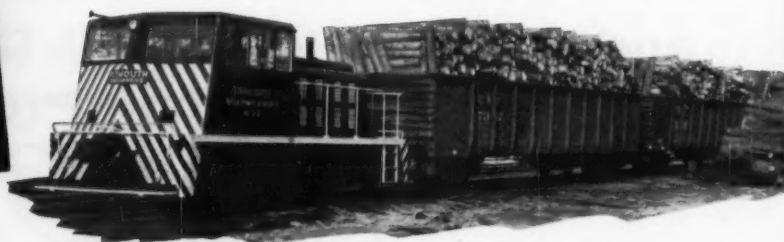
For free copy circle No. 80 on postcard, p. 267

PLYMOUTH[®] LOCOMOTIVES with Torqomotive Drive 3 TO 80 TONS

Here's the lineup of well-known Plymouth power in models from 3 to 80 tons . . . narrow or standard gauge . . . Gasoline or Diesel . . . mechanical or Torqomotive Drive . . . Diesel-Electrics. Records of users show Plymouth's economy, efficiency, dependability. Find out how these profit characteristics can improve your operation and cut costs.

PLYMOUTH LOCOMOTIVE WORKS
Division of The Fate-Root-Heath Company
Dept. A-2, Plymouth, Ohio

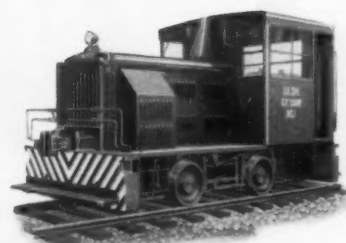
Industry's Smoothest Switchers



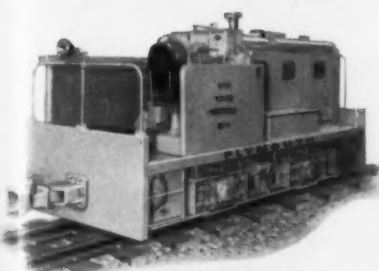
SINCE 1914 Plymouth Locomotives have been used for heavy hauling and switching jobs. They have proven themselves in year after year service with rock bottom economy, maximum availability, minimum down time. Pictured above is the new WDT Cab-in-front model, 40 tons, in service hauling pulpwood. Both the MDT and WDT are available in this model or in the standard models shown below.



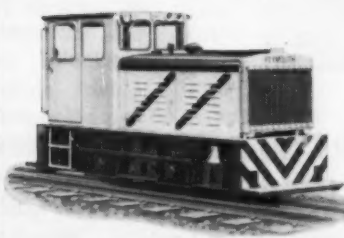
M SERIES, 25, 30, 35 or 40 tons, Diesel or gasoline, mechanical or Torqomotive Drive. This is the standard model, rear cab.



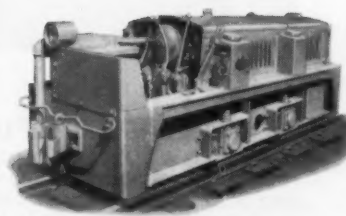
J SERIES, 12, 14, 16, 18 or 20 tons, Diesel or gasoline, mechanical or Torqomotive Drive. Available on 4 or 6 wheels.



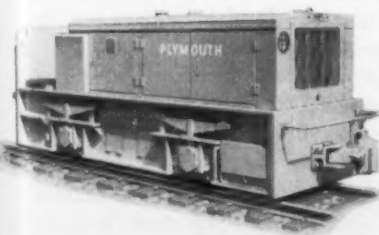
J SERIES Mine-O-Motive, 15 to 25 tons. Diesel powered with exhaust conditioner, Torqomotive Drive. Approved under Schedule #24.



D SERIES, 8, 10 or 12 tons, Diesel or gasoline, mechanical or Torqomotive Drive. Cast or Welded Frame.

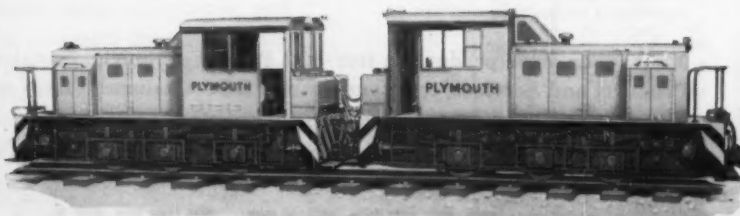
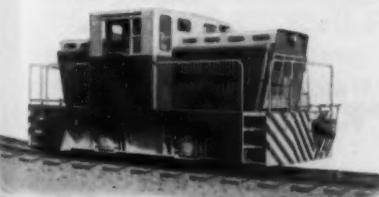


F SERIES, 5, 6, or 7 tons, available as mine type (illustrated) or cab type, Torqomotive Drive, short wheelbase.



DMS SERIES Mine-O-Motive, 8, 10 or 12 tons. Diesel powered with shaft drive to both axles, full power shifting. Approved under Schedule #24.

CR SERIES, 40 to 60 tons. Diesel powered with shaft drive to both axles, full power shifting, Torqomotive Drive. Speeds to 35 MPH.



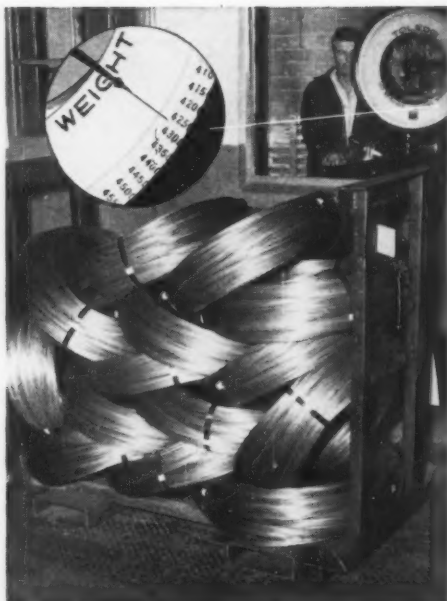
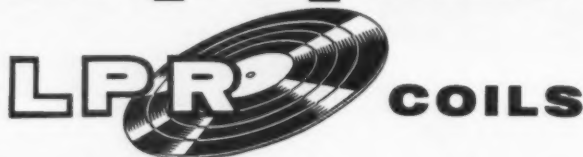
PLYMOUTH TANDEM—M or W Series 50 to 80 tons. The M or W Series can be built for tandem, single control operation, up to 80 tons on either 8 or 12 wheels. Each locomotive can also be operated individually.

*Torqomotive Drive; Plymouth transmission coupled to hydraulic torque-converter.

PLYMOUTH[®] LOCOMOTIVES

PLYMOUTH LOCOMOTIVE WORKS

Bright Wire Fabricators: Now You Can Run 2 Tons of Wire Non-Stop and Save up to 13 Coil Changes by Using DSC-Portsmouth Long Production Run



DSC-LPR BRIGHT WIRE COILS

Low and Medium Carbon

.072" / .500" Inclusive
(up to about 4000 lbs.)

.0475" / .062" Inclusive
(up to about 1000 lbs.)

High Carbon

.080" / .250" Inclusive
(up to about 4000 lbs.)

Here are two loads of Bright Wire, each weighing 4,250 pounds:
On the left, 14 standard coils; on the right, a single DSC-LPR coil.
(Notice how the LPR stands up by itself.)



THE SIMPLE ARITHMETIC OF LPR COILS—Each time you stop a machine to feed the "next" coil of wire, you pyramid your production losses three ways: (1) you build up idle time costs; (2) you increase costs and delays by more frequent set-up adjustments; (3) you multiply individual coil remnant scrap losses. *Such losses are directly proportionate to the number of coils used for a given job-weight.*

LPR's cut down production lulls and their contingent costs. Possessing far greater density than standard coils, LPR's save handling time and storage space. LPR's also improve inventory control. Besides LPR's rid you of the bother and expense of returnable carriers.

LPR ECONOMIES REPORTED BY TYPICAL USERS —

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- "We reduced our coil storage space 15%."
- "We quit using small-coil storage racks."
- "Our man-hour costs dropped 20%."
- "No more returnable gimmicks for us."
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- "In our cutting, straightening and flattening department, one operator now runs four machines, against three machines previously."

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FREE LITERATURE

Continued

These publications describe money-saving equipment and services . . . they are free with no obligation . . . just circle the number and mail the postcard.

Rolling Mills

Rolling precision precious metal electrical tape is discussed in an engineering newsletter. It explains how a rolling mill forms round gold and palladium wire into electrical contact tape. No waste results. (Fenn Mfg. Co.)

For free copy circle No. 1 on postcard

Auxiliary Power

Designed to provide external 12-v dc power for portable test instruments is an auxiliary power supply outlined in a data sheet. It handles four instruments simultaneously. (Consolidated Electrodynamics Corp.)

For free copy circle No. 2 on postcard

Silicon Rectifier

Application notes on a silicon controlled rectifier are included in a 17-page booklet. This rectifier, it says, is "potentially capable of causing a revolution in the electrical industry." (Semiconductor Products Dept., General Electric Co.)

For free copy circle No. 3 on postcard

Arc Welding

Increased welding speeds and control of bead shape are advantages of multiple electrode submerged arc tandem welding. So states a 4-page bulletin, giving more details. (Lincoln Electric Co.)

For free copy circle No. 4 on postcard

Ductile Irons

Alloys for ductile iron making are discussed in a pamphlet. Six different nodular alloys for magnesium addition are described, as are graphitizing agents. It lists

typical ductile iron grades in current production. (Vanadium Corp. of America.)

For free copy circle No. 5 on postcard

Drilling, Tapping

Horizontal and vertical hydraulic drilling and tapping machines are announced in new catalogs. Key feature is interchangeability of spindle heads and tables. (Baker Brothers, Inc.)

For free copy circle No. 6 on postcard

Tap Attachment

Swedish tapping attachments are described in a folder. (Homestrand, Inc.)

For free copy circle No. 7 on postcard

Materials Handling

Case history bulletin 283-1 tells how a large manufacturer increased production and shipping schedules without expanding plant facilities. It deals with materials handling. (Lewis-Shepard Products, Inc.)

For free copy circle No. 8 on postcard

Thermocouple Wire

Thermocouple wire with ceramic alloy insulation is announced in a bulletin. It comes in several ISA calibrations, from 0.020 to 1/2-in. OD. Insulation can be magnesium, aluminum or zirconium oxide hard pack. (Claud S. Gordon Co.)

For free copy circle No. 9 on postcard

Finishing

Precision finishing by barrel and wet blasting methods is discussed in a company publication. Applications of media, compounds and abrasives necessary for either method are also covered. (Wheelabrator Corp.)

For free copy circle No. 10 on postcard

Plastic Dies

Formica as a tooling and metal forming material is discussed in a 4-page folder. Dies of this material are strong and lightweight. They instantly release metal without sticking, splitting or tearing. The lami-

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41	42	43	44	45	46	47	48	49	50
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71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
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FREE LITERATURE

nated plastic can be fabricated quickly and cheaply. (Formica Corp.)

For free copy circle No. 11 on postcard

Boosting Blowers

How to increase furnace efficiency without expensive installation costs is told in a data sheet. It describes boosting blowers which mount directly under furnaces. No compressor, no mixing tank, no air piping are necessary. (Clements Mfg. Co.)

For free copy circle No. 12 on postcard

Nitrogen and Metals

Use of nitrogen for flushing molten metals is discussed in an 8-page report. It tells how this gas helps produce porosity-free castings for foundrymen. (National Cylinder Gas Div., Chemetron Corp.)

For free copy circle No. 13 on postcard

OBI Presses

Available in 22, 32 and 45-ton models, OBI presses feature a compact drive unit that operates while submerged in oil. The oil absorbs engagement loads rather than the clutch and brake. An 8-page catalog gives details. (Clearing Machine Corp.)

For free copy circle No. 14 on postcard

Clamping, Bending

Two new accessories for use with welding platens or bending blocks are a bending post and a horizontal clamp. They serve many clamping or bending jobs. Literature detailing these and other tools is available. (Acorn Iron & Supply Co.)

For free copy circle No. 15 on postcard

Vanadium Punches

Low cost, carbon-vanadium punches are outlined in a catalog. Punches are made to precision standards. Concentricity tolerance

is 0.0002 in. TIR between point and shank. (For free copy write on company letterhead to Punch Div., Pivot Punch & Die Corp., North Tonawanda, N. Y.)

Metal Cleaner

A folder introduces a cleaning material which removes soils from zinc without darkening it. It also works on brass, copper or steel all in the same solution. (Oakite Products, Inc.)

For free copy circle No. 16 on postcard

Barrel Finishing

Tumbling media for barrel finishing is featured in a 20-page booklet. Handy do's and don'ts appear. (The Carborundum Co.)

For free copy circle No. 17 on postcard

Metal Stampings

Stampings in any quantity are offered by a firm in its 4-page bulletin. Die-cut stampings of practically any material can be blanked, formed and drawn to any practical size and shape. It tells how stampings cut machining costs. (Dayton Rogers Mfg. Co.)

For free copy circle No. 18 on postcard

Plastic Steel

Plastic steel for emergency and maintenance repairs is described in a bulletin. Case histories show time and money savings already achieved with this material. (Devcon Corp.)

For free copy circle No. 19 on postcard

Liquid Gages

Liquid level gages and valves for any job can be picked with a new slide selector. It gives correct size and type for a particular application. (Jerguson Gage & Valve Co.)

For free copy circle No. 20 on postcard

Infra-red Heat

Infra-red heating equipment covered in a 20-page booklet thaws frozen bulk material in railroad cars. (Hewitt-Robins, Inc.)

For free copy circle No. 21 on postcard



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(Please Be Specific)

HOW MANY PLANT WORKERS EMPLOYED AT THIS PLANT?

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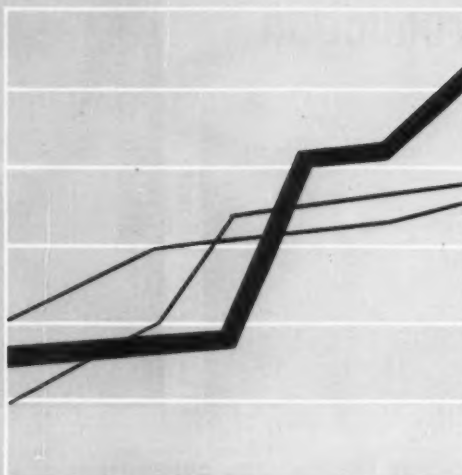
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Anti
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Bras
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THE

Price and Production Data

as of January 1, 1959

Steel	P. 272
Nonferrous	P. 279
Pig Iron, Ore	P. 282
Ferroalloys	P. 285
Scrap	P. 286



Index To This Section:

CANADIAN IRON & STEEL	
Ferroalloy Production	282
Pig Iron Production	282
Steel Capacity	273
Steel Production	273

FINANCIAL ANALYSIS, STEEL	
	275-276

FERROALLOYS	
Ferromanganese	285
Ferrosilicon	285
Spiegeleisen	285

METAL POWDERS	
Copper Powder Prices, Shipments	281
Iron Powder Shipments, Imports	281
Iron Powder Prices	281
Zinc Powder Prices	281

NONFERROUS PRICES	
Aluminum Scrap, Cast	279
Antimony, Monthly	280
Brass Ingots, 85-5-5-5	279
Brass Scrap, No. 1 Comp.	279
Bronze Ingots, 88-10-2	279
Cadmium Sticks, Bars	279
Cobalt, 97 to 99 Pct	279
Copper, Electrolytic	280
Lead	281
Magnesium, 99.8 Pct Plus	280

Nickel, Electrolytic	280
No. 1 Heavy Copper Scrap	279
Prime Western Zinc	281
Remelt Aluminum Ingot	279
Straits Tin	280

ORE, IRON	
Analyses	284
Consumption	284
Prices	284
Shipments	284

PIG IRON PRICES	
Birmingham Foundry	283
Buffalo Foundry	283
Chicago Foundry	283
Composite, Price	282
Foundry Coke	284
Furnace Coke	284
Granite City, Ill., Foundry	283
Valley Basic	283
Valley Foundry	283
Valley Malleable	283

PRODUCTION	
Aluminum	280
Magnesium	281
Pig Iron	282
Steel Capacity, Production	273
Steel Ingots, Monthly	274
Steel Operating Rates	272
World Steel	274

REFRACTORIES	
Chrome Brick	285
Fire Clay Brick	285
Magnesite Brick	285
Silica Brick	285

SCRAP, IRON, STEEL	
Composite Prices	
No. 1 Heavy Melting	286
No. 2 Bundles	286
Chicago Heavy Melting	286
Philadelphia Heavy Melting	286
Pittsburgh Heavy Melting	286

STEEL PRICES	
Buttweld Steel Pipe	278
Cast Iron Water Pipe	278
Cold-Finished Steel Bars	278
Cold-Rolled Sheets	277
Cold-Rolled Strip	277
Composite, Steel	272
Galvanized Sheets	277
High Speed Tool Steel	277
Hot-Rolled Sheets	277
Hot-Rolled Strip	277
Manufacturer's Bright Wire	278
Merchant Bars	278
Plates at Pittsburgh	277
Stainless Steel Sheets	278
Steel Rails	278
Structural Steel Shapes	278
Tinplate at Pittsburgh	277

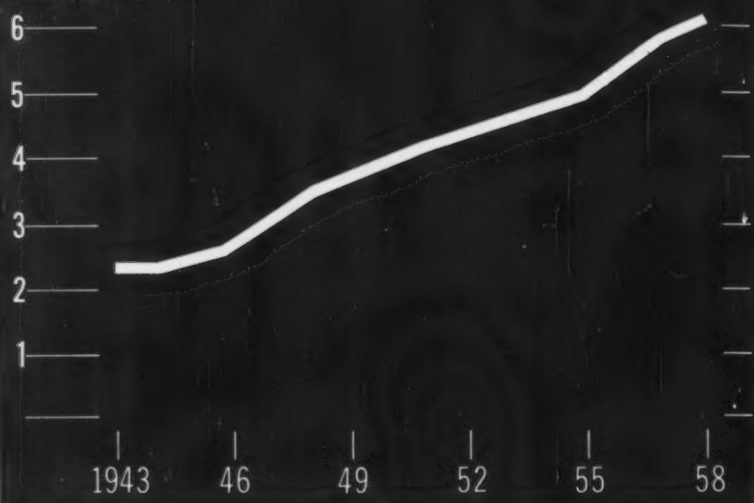
Steel Prices, Production



FINISHED STEEL BASE PRICES

Cents per Pound

The Iron Age Composite



THE IRON AGE FINISHED STEEL COMPOSITE PRICE

Current Series, 1935 to 1958, Cents Per Pound

	1935	1936	1937	1938	1939	1940*	1945*	1946	1947	1948
Jan.	2.065	2.076	2.323	2.584	2.354	2.305	2.412	2.464	2.877	3.193
Feb.	2.065	2.065	2.323	2.581	2.354	2.305	2.427	2.555	2.884	3.215
Mar.	2.065	2.065	2.532	2.578	2.354	2.305	2.432	2.719	2.884	3.241
Apr.	2.065	2.062	2.584	2.578	2.354	2.267	2.433	2.719	2.884	3.241
May	2.065	2.062	2.584	2.569	2.308	2.305	2.436	2.719	2.884	3.211
June	2.065	2.067	2.584	2.513	2.283	2.305	2.464	2.719	2.884	3.211
July	2.065	2.139	2.584	2.359	2.283	2.305	2.464	2.719	2.914	3.293
Aug.	2.065	2.139	2.584	2.359	2.283	2.305	2.464	2.719	3.193	3.720
Sept.	2.065	1.146	2.584	2.357	2.283	2.305	2.464	2.719	3.193	3.720
Oct.	2.076	2.172	2.584	2.320	2.283	2.305	2.464	2.719	3.193	3.720
Nov.	2.076	2.172	2.584	2.354	2.268	2.305	2.464	2.719	3.193	3.720
Dec.	2.076	2.283	2.584	2.354	2.305	2.305	2.464	2.747	3.193	3.720
Average	2.068	2.118	2.536	2.459	2.311	2.302	2.449	2.686	3.014	3.434
1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	
Jan.	3.720	3.837	4.131	4.131	4.376	4.634	4.797	5.174	5.622	5.967
Feb.	3.719	3.837	4.131	4.131	4.376	4.634	4.797	5.174	5.649	5.967
Mar.	3.715	3.837	4.131	4.131	4.376	4.634	4.797	5.179	5.666	5.967
Apr.	3.709	3.837	4.131	4.131	4.376	4.634	4.797	5.179	5.670	5.967
May	3.706	3.837	4.131	4.131	4.393	4.634	4.797	5.179	5.670	5.967
June	3.705	3.837	4.131	4.131	4.517	4.634	4.797	5.179	5.670	5.967
July	3.705	3.837	4.131	4.180	4.634	4.789	5.061	5.179	5.818	5.967
Aug.	3.705	3.837	4.131	4.376	4.634	4.801	5.174	5.560	5.967	6.175
Sept.	3.705	3.837	4.131	4.376	4.634	4.801	5.174	5.622	5.967	6.194
Oct.	3.705	3.837	4.131	4.376	4.634	4.798	5.174	5.622	5.967	6.196
Nov.	3.705	3.837	4.131	4.376	4.633	4.797	5.174	5.622	5.967	6.196
Dec.	3.756	4.131	4.131	4.376	4.633	4.797	5.174	5.622	5.967	6.196
Average	3.713	3.862	4.131	4.237	4.518	4.716	4.977	5.358	5.800	6.060

* 1941-1944 inclusive: 2.395.

THE IRON AGE finished steel composite price is a weighted average of the base prices of 10 major steel products which account for the majority of finished steel shipments. It is weighted by the percentage that each of these products is to total finished steel shipments during the base period. With the base constant, the only changes in the composite from 1929 through 1940 or from 1941 through 1958 occur when one or more steel products prices were changed.

In the composite shown here there are two base periods. For the years 1931 through 1940 the base is finished steel shipments for 1929-1939 inclusive. For 1941 through 1958 the base is finished steel shipments for the 7 years 1937 to 1940 inclusive and 1946 to 1948 inclusive. Two base periods are used because of basic changes in the shipment pattern in the 20 years covered. In each case the products remain the same. They are hot-rolled bars, structural shapes, plates, rails, pipe, wire and hot- and cold-rolled sheets and strip. To eliminate variations due to nonferrous metals price fluctuations, no coated products are included.

Details of latest revisions which appear in current series may be found in The Iron Age, May 12, 1949, p. 139. This reference also gives a comparison of current series with former series.

STEEL INDUSTRY OPERATING RATES

U. S. Openhearth, Bessemer and Electric Furnace Ingots and Steel for Castings—Percent of Capacity

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Jan.	83.40	96.90	94.50	96.80	95.70	88.80	48.60	93.20	93.60	100.4	94.0	99.9	99.3	99.1	75.3	82.7	99.3	97.1	56.5
Feb.	70.00	96.60	95.90	98.50	97.00	90.80	19.80	91.90	93.00	101.6	89.2	97.2	100.7	99.1	74.3	88.0	99.2	97.6	53.6
Mar.	63.50	99.70	98.20	100.00	98.60	95.00	63.30	94.40	95.30	102.9	88.8	102.5	102.2	101.8	69.0	93.4	100.2	93.4	52.3
Apr.	61.20	97.60	97.70	99.30	98.80	92.80	77.50	93.90	98.40	98.6	100.6	103.1	99.7	98.7	68.1	94.8	99.7	89.5	47.8
May	71.80	98.70	98.10	98.40	97.10	91.80	52.20	94.70	94.80	93.0	101.4	102.8	98.2	100.1	70.7	96.6	96.2	88.4	52.7
June	84.50	96.20	96.30	94.80	94.10	87.10	74.40	92.90	93.80	82.2	96.6	101.0	105.6	97.2	72.0	94.1	92.1	85.6	61.6
July	83.00	93.40	94.50	96.20	94.30	86.30	84.90	85.10	88.70	71.0	94.8	96.3	17.7	83.1	62.9	83.3	14.9	78.6	53.7
Aug.	89.50	95.70	98.40	96.30	94.10	70.70	88.80	92.20	93.10	82.3	96.5	98.7	92.4	94.2	63.1	89.7	74.5	81.8	61.0
Sept.	90.80	96.40	96.40	100.70	94.00	76.30	86.90	90.60	96.10	83.6	99.4	101.2	101.9	92.1	66.7	95.7	98.8	81.8	66.8
Oct.	98.10	99.00	100.00	101.20	96.80	69.00	89.00	97.70	98.90	11.4	102.4	103.0	106.6	94.7	72.9	96.2	101.3	81.1	73.8
Nov.	96.80	98.30	97.80	96.80	94.30	78.90	85.40	96.50	100.50	83.4	97.0	102.6	105.9	99.9	79.1	99.0	100.0	78.5	74.2
Dec.	94.10	98.10	96.80	94.20	92.60	74.80	73.90	96.40	97.70	94.8	98.0	100.6	105.6	79.7	78.8	98.5	99.4	72.0	74.0*
Average	82.10	97.40	96.80	98.10	95.50	83.50	72.50	93.00	94.10	81.1	96.9	100.9	85.8	94.9	71.0	93.0	98.8	84.5	60.6*

* Estimate.

† Preliminary.

Source: American Iron and Steel Institute.

Openhearth, bessemer and electric furnace steel capacity, production and operating rates . . . Canadian output, capacity.

STEEL INDUSTRY

COMPOSITE PRICE BY PERIODS

Period	Cents per Pound
Apr. 12, 1949 to May 2, 1949	3.708
May 3, 1949 to Dec. 21, 1949	3.706
Dec. 22, 1949 to Dec. 28, 1949	3.836
Dec. 29, 1949 to Dec. 4, 1950	3.837
Dec. 5, 1950 to July 25, 1952	4.131
July 26, 1952 to May 8, 1953	4.376
May 9, 1953 to May 21, 1953	4.390
May 22, 1953 to June 16, 1953	4.417
June 17, 1953 to Nov. 14, 1953	4.634
Nov. 15, 1953 to Dec. 15, 1953	4.632
Dec. 16, 1953 to June 30, 1954	4.634
July 1, 1954 to July 2, 1954	4.635
July 3, 1954 to July 5, 1954	4.791
July 6, 1954 to Oct. 3, 1954	4.801
Oct. 4, 1954 to Nov. 9, 1954	4.798
Nov. 10, 1954 to July 11, 1955	4.797
July 12, 1955 to July 18, 1955	5.178
July 19, 1955 to July 25, 1955	5.176
July 26, 1955 to Aug. 19, 1955	5.174
Aug. 20, 1955 to Aug. 6, 1956	5.179
Aug. 7, 1956 to Aug. 13, 1956	5.374
Aug. 14, 1956 to Feb. 11, 1957	5.622
Feb. 12, 1957 to Feb. 18, 1957	5.650
Feb. 19, 1957 to Feb. 25, 1957	5.661
Feb. 26, 1957 to March 4, 1957	5.683
March 5, 1957 to July 8, 1957	5.670
July 9, 1957 to Aug. 4, 1958	5.967
Aug. 5, 1958 to Aug. 11, 1958	6.138
Aug. 12, 1958 to Sept. 8, 1958	6.188
Sept. 9, 1958 to Dec. 31, 1958	6.196

CANADIAN STEEL OUTPUT

Ingot and Steel for Castings, Net Tons

	Ingot	Castings	Total Steel Ingot and Castings
1931	744,605	41,501	786,106
1932	349,843	25,664	375,507
1933	441,346	17,830	459,176
1934	827,041	23,116	850,157
1935	1,016,814	35,123	1,051,937
1936	1,211,334	38,337	1,249,671
1937	1,496,575	74,652	1,571,137
1938	1,238,078	66,536	1,294,714
1939	1,266,056	60,987	1,327,043
1940	2,177,973	77,899	2,255,872
1941	2,578,063	123,260	2,701,313
1942	2,942,921	178,440	3,121,361
1943	2,848,235	148,743	2,996,978
1944	2,878,407	146,003	3,024,410
1945	2,747,206	134,117	2,881,323
1946	2,253,437	81,194	2,334,631
1947	2,854,532	90,634	2,945,166
1948	3,089,027	112,629	3,201,656
1949	3,089,368	97,562	3,186,930
1950	3,296,058	86,063	3,382,121
1951	3,446,125	121,236	3,567,361
1952	3,578,106	122,037	3,700,143
1953	4,009,813	105,656	4,115,469
1954	3,113,882	80,300	3,194,122
1955	4,441,743	87,658	4,529,401
1956	5,188,227	120,578	5,308,805
1957	4,924,133	113,731	5,037,864
1958*	4,150,000	90,000	4,240,000

* Estimated. Source: Dominion Bureau of Statistics

CANADIAN STEEL CAPACITY

Ingot Capacity and Operating Rates

	Steel Ingot Capacity	Steel Ingot Output	Percent of Capacity
1940	2,667,000	2,177,973	81.6
1941	2,964,000	2,578,063	86.9
1942	3,172,000	2,942,921	92.7
1943	3,257,500	2,848,235	87.4
1944	3,238,200	2,878,407	88.2
1945	3,358,600	2,747,206	81.7
1946	3,358,600	2,253,437	67.0
1947	3,245,000	2,854,532	87.9
1948	3,490,000	3,089,027	88.5
1949	3,089,000	3,089,368	94.1
1950	3,672,500	3,296,058	89.8
1951	3,630,000	3,446,125	94.9
1952	3,830,000	3,578,106	93.5
1953	4,302,800	4,009,813	93.1
1954	4,657,500	3,113,882	66.8
1955	4,883,000	4,441,743	90.9
1956	5,804,000	5,188,227	89.4
1957	5,804,000	4,924,133	84.9
1958*	5,913,000	4,150,000	70.1

* Estimated.

STEEL CAPACITY, PRODUCTION AND RATES

Ingot and Steel for Castings, Net Tons

	Total Capacity	Openhearth Production	Openhearth Percent of Total Output	Bessemer Production	Bessemer Percent of Total Output	Electric* Production	Electric* Percent of Total Output	Total Production	Total Percent of Capacity
1956	140,742,570	76,670,000	90.2	1,870,000	2.2	6,460,000	7.6	85,000,000	60.6
1957	133,459,150	101,657,776	90.2	2,475,138	2.2	6,582,082	7.6	112,714,995	84.5
1958	128,383,090	102,840,585	89.2	3,227,997	2.8	9,147,567	8.0	115,215,149	89.9
1955	125,828,310	105,359,417	90.0	3,319,517	2.8	8,357,151	7.2	117,036,035	93.0
1954	124,330,410	80,327,494	91.0	2,548,104	2.9	5,436,054	6.1	88,311,652	71.0
1953	117,547,470	100,473,823	90.0	3,855,705	3.5	7,280,191	6.5	111,609,719	94.9
1952	108,687,670	82,846,439	88.9	3,523,077	3.5	6,797,923	7.3	93,168,039	85.8
1951	104,229,650	93,166,518	88.6	4,890,945	4.6	7,142,384	6.8	105,199,848	100.9
1950	99,982,680	86,262,509	89.1	4,534,558	4.7	6,039,000	6.2	96,836,075	96.9
1949	96,120,930	70,248,803	90.1	3,946,856	5.1	3,782,717	4.8	77,978,176	81.1
1948	94,233,460	79,340,157	89.5	4,243,172	4.8	5,057,141	5.7	88,640,470	94.1
1947	91,241,250	76,873,793	90.8	4,232,543	5.0	3,787,758	4.5	84,949,071	93.0
1946	91,880,560	60,711,963	91.2	3,327,737	5.0	2,563,024	3.8	66,602,724	72.5
1945	95,505,250	71,939,602	90.3	4,305,318	5.4	3,456,728	4.3	79,701,648	83.5
1944	93,554,420	60,383,953	89.7	5,039,923	5.6	4,237,724	4.7	69,641,600	95.5
1943	90,589,190	78,621,804	88.5	5,625,492	6.3	4,589,216	5.2	88,836,512	96.1
1942	88,896,550	76,501,957	88.9	5,553,424	6.5	3,976,550	4.6	86,031,931	96.8
1941	85,158,150	74,389,619	89.8	5,578,071	6.7	2,871,569	3.5	82,839,259	97.3
1940	81,619,496	61,573,083	91.9	3,708,573	5.6	1,701,030	2.5	66,982,686	82.1
1939	81,628,958	48,409,800	91.7	3,358,916	6.4	1,029,998	1.9	52,788,714	64.5
1938	80,158,638	29,000,016	91.6	2,106,340	6.6	565,634	1.8	31,751,990	39.6
1937	78,148,374	51,824,979	91.5	3,853,918	6.8	948,048	1.7	56,636,945	72.5
1936	78,164,300	48,760,463	91.2	3,873,472	7.2	866,064	1.6	53,499,999	68.4
1935	78,451,930	34,401,280	90.1	3,175,235	8.3	607,190	1.6	38,183,705	48.7
1934	76,128,416	26,354,838	90.3	2,421,840	8.3	405,246	1.4	29,181,924	37.4
1933	78,614,463	22,827,473	87.7	2,720,246	10.5	472,510	1.8	26,020,229	33.1
1932	78,780,913	13,336,210	87.0	1,715,925	11.2	270,765	1.8	15,322,901	19.5
1931	77,257,803	25,210,714	85.8	3,386,259	11.6	461,988	1.6	29,068,961	37.6
1930	72,895,406	39,255,073	86.1	5,639,714	12.4	688,634	1.5	45,583,421	62.5
1929	71,438,616	54,155,235	85.7	7,977,210	12.6	1,029,045	1.7	62,205,490	88.5

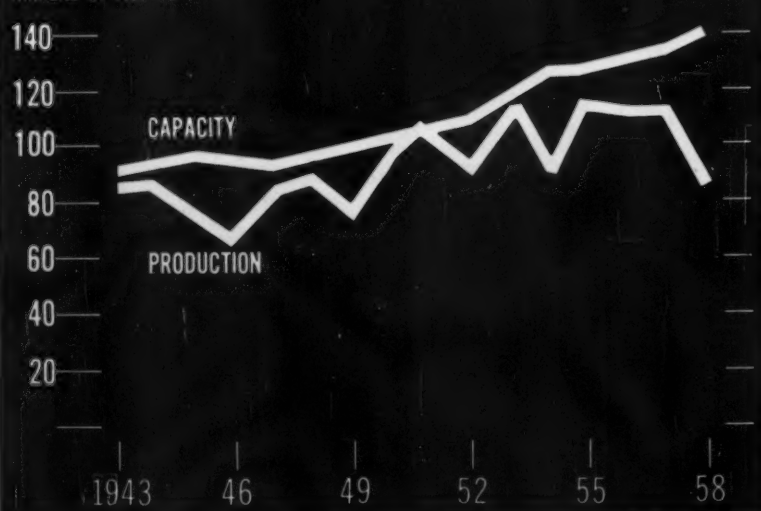
* Includes very small tonnages of crucible steel.

† IRON AGE Estimate.
Source: American Iron & Steel Institute

STEEL PRODUCTION AND CAPACITY, U.S.A.

Millions of Net Tons

1958 - Iron Age Estimate



STEEL INDUSTRY

Monthly data on U.S. production of openhearth, bessemer and electric furnace ingots . . . Round-up of world steel output.

WORLD STEEL PRODUCTION

Ingots and Steel for Castings, Thousands of Net Tons

Compiled by THE IRON AGE from the United Nations Bulletin of Statistics, Chambre Syndicate de la Siderurgie Francaise, British Iron and Steel Federation and the American Iron and Steel Institute.

	1958*	1957†	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
Australia	3,300	3,373	2,914	2,460	2,117	2,296	1,835	1,606	1,596	1,309	1,425	1,373
Austria	2,800	2,766	2,290	2,009	1,822	1,427	1,165	1,133	1,044	920	713	394
Belgium	6,700	6,922	7,028	6,403	5,522	4,997	5,621	5,590	4,156	4,242	4,318	3,181
Brazil	1,800	1,590	1,504	1,286	1,286	1,109	985	930	834	677	545	426
Canada	4,150	5,040	5,306	4,529	3,192	4,110	3,703	3,567	3,384	3,196	3,199	2,902
China	10,700	5,499	5,024	3,142	2,987	1,150	.....	.....	.....	.....	.....	.....
Czechoslovakia	6,000	5,622	5,382	5,401	4,684	4,883	3,944	3,651	3,190	2,756	2,910	2,520
France	16,100	15,546	14,770	13,880	11,319	11,023	11,979	10,842	9,537	10,086	7,984	6,338
Germany West	25,300	27,014	25,561	23,518	19,221	16,997	17,423	14,888	13,361 ²	10,090 ²	6,127 ²	4,739 ²
Germany East	3,300	3,203	3,020	2,756	2,488	2,066	2,067	1,711	.....	.....	.....	.....
Hungary	1,800	1,411	1,571	1,764	1,644	1,553	1,539	1,380	1,100	882	794	658
India	2,000	1,915	1,947	1,909	1,882	1,891	1,768	1,680	1,610	1,517	1,237	1,346
Italy	7,000	7,482	6,512	5,947	4,636	3,858	3,897	3,382	2,583	2,285	2,342	1,874
Japan	13,100	13,854	12,243	10,370	8,523	8,445	7,703	7,167	5,332	3,392	1,916	1,041
Luxembourg	3,700	3,853	3,809	3,555	3,118	2,931	3,309	3,391	2,702	2,807	2,705	1,688
Mexico	800	683	648	579	515	594	561	600	390	380	266	353
Netherlands	1,600	1,299	1,159	1,074	1,023	948	755	609	.....	.....	.....	.....
Poland	6,200	5,846	5,527	4,894	4,370	3,965	3,509	3,078	2,750	2,539	2,116	1,731
Rumania	1,000	941	862	843	593	793	769	720	.....	.....	.....	.....
Saar	3,900	3,797	3,719	3,849	3,093	2,959	3,112	2,869	2,092	1,935	1,922	780
South Africa	1,900	1,848	1,708	1,681	1,523	1,366	1,326	1,045	830	699	750	680
Spain	1,700	1,456	1,370	1,337	1,209	965	1,000	962	900	793	664	561
Sweden	2,500	2,733	2,645	2,342	2,052	1,969	1,836	1,658	1,587	1,511	1,270	1,311
Un. Kingdom	22,000	24,304	23,138	22,168	20,742	19,723	18,386	17,518	18,240	17,256	16,662	12,248
U. S. S. R.	59,500	56,325	54,443	49,936	45,203	41,690	36,029	34,500	29,800	23,600	18,700	14,700
United States	85,000	112,717	115,216	117,036	88,312	111,610	93,168	108,200	96,836	77,976	68,894	64,894
Yugoslavia	1,200	1,154	977	809	679	588	488	470	.....	.....	.....	.....
Others	2,900	2,868	2,380	1,816	1,546	2,280	1,524	.....	.....	.....	.....	.....
Totals	297,750*	321,061	312,654	287,011	245,013	258,706	229,423	229,945	204,348	173,386	167,107	147,156

* Estimated.

† Revised.

² British, French and United States Zones.

WORLD STEEL DATA

Data in the table at left are based on an extensive Iron Age study. Assisting in the study were the Intelligence Dept. of the British Iron & Steel Federation, Chambre Syndicate de la Siderurgie Francaise, United Nations, American Iron and Steel Institute and Iron Age correspondents throughout the world. Though based on the best available intelligence, the accuracy of Iron Curtain steel data is naturally not of the same order as that of the free world.

U. S. MONTHLY STEEL INGOT PRODUCTION

Openhearth, Bessemer and Electric Furnace Ingots and Steel for Castings, Net Tons; U. S. Only

	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Jan.	1,157,745	2,276,596	3,279,473	3,474,353	5,398,326	1,984,815	3,663,004	5,764,723	6,928,083	7,112,106	7,424,522	7,592,603	7,204,312
Feb.	1,221,864	2,521,472	3,169,909	3,379,587	5,050,824	1,942,795	3,448,120	4,525,797	6,237,900	6,512,535	6,824,604	7,194,009	6,652,765
March	1,022,675	3,190,040	3,273,910	3,810,436	5,970,247	2,293,884	3,929,387	4,389,183	7,131,641	7,392,111	7,674,578	7,826,257	7,705,929
April	1,531,813	3,345,922	3,017,177	4,494,782	8,801,540	2,196,413	3,431,600	4,100,474	6,756,949	7,121,291	7,373,703	7,593,688	7,289,887
May	2,250,236	3,675,202	3,605,425	4,614,529	5,894,280	2,581,189	3,372,838	4,967,782	7,053,238	7,382,578	7,549,591	7,702,576	7,448,667
June	2,919,697	3,467,612	2,590,771	4,543,868	4,767,710	1,868,846	3,606,729	5,657,443	6,800,730	7,015,302	7,059,353	7,234,257	6,840,522
July	3,607,288	1,697,879	2,591,240	4,473,940	5,212,832	2,259,677	3,648,639	5,724,625	8,821,682	7,144,958	7,407,876	7,948,387	6,985,571
Aug.	3,260,279	1,574,649	3,331,770	4,782,442	5,580,683	2,903,805	4,341,726	6,188,383	7,000,957	7,227,655	7,588,464	7,498,913	5,735,317
Sept.	2,599,370	1,446,551	3,227,876	4,744,841	4,907,592	3,029,736	4,881,601	6,056,246	6,819,246	7,057,519	7,514,339	7,235,111	5,982,475
Oct.	2,373,729	1,689,272	3,590,945	5,182,430	3,881,819	3,554,912	6,223,126	6,644,542	7,242,683	7,579,514	7,614,117	7,820,885	5,596,776
Nov.	1,731,830	1,836,088	3,599,687	4,941,014	2,494,793	4,072,676	6,292,322	6,469,107	6,969,987	7,179,812	7,371,975	7,278,719	6,200,466
Dec.	2,047,790	2,239,126	3,511,702	5,056,843	1,685,273	3,751,253	5,958,893	6,485,357	7,163,999	7,304,540	7,295,144	7,336,170	6,067,937
Total	25,724,196	29,181,329	38,163,705	53,449,085	56,635,899	31,751,963	52,797,763	66,961,682	82,927,557	86,029,921	88,836,366	89,841,575	79,701,624
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Jan.	3,872,887	7,222,612	7,480,878	8,197,390	7,941,797	8,848,486	9,136,117	9,587,962	7,951,486	8,837,736	10,826,231	11,008,762	6,763,912
Feb.	1,382,682	6,430,401	8,948,017	7,493,942	6,803,032	7,770,407	8,657,210	9,932,779	7,083,237	8,496,934	10,118,995	9,987,206	5,782,323
March	6,508,784	7,318,974	7,616,770	8,401,796	7,497,822	7,075,630	9,404,191	10,168,098	7,289,600	9,981,754	10,924,788	10,589,074	6,254,622
April	5,801,195	7,061,842	6,224,467	7,796,165	8,224,504	8,845,979	7,991,142	8,545,538	6,970,937	9,815,095	10,536,121	8,814,780	5,532,901
May	4,072,620	7,339,014	7,580,642	7,598,990	8,564,207	9,100,155	8,204,596	9,997,080	7,472,738	10,326,316	10,490,376	9,792,323	6,301,159
June	5,625,773	8,977,714	7,265,249	6,504,666	8,143,230	8,682,348	1,639,491	9,404,479	7,363,634	9,746,467	9,721,436	7,391,402	7,127,460
July	6,618,663	6,576,685	7,075,517	5,764,831	8,062,922	8,684,495	1,626,958	9,275,673	6,627,597	9,100,946	1,622,163	8,906,732	6,420,466
Aug.	6,924,522	6,991,182	7,446,834	6,722,771	8,242,174	7,730,087	8,496,087	9,405,580	6,686,907	9,594,545	8,122,597	9,233,680	7,295,093
Sept.	6,555,546	6,787,467	7,424,944	6,587,836	8,204,897	8,660,387	9,062,108	8,683,428	6,507,463	9,682,328	10,422,659	9,877,906	7,610,372
Oct.	6,951,742	7,570,162	7,996,695	926,347	8,752,686	8,121,896	9,806,830	9,462,722	7,701,553	10,501,050	11,048,513	9,187,717	16,817,776
Nov.	6,457,771	7,242,427	7,767,558	4,223,129	8,023,383	8,790,352	9,438,886	8,890,052	6,089,427	10,247,398	10,555,590	16,392,919	16,882,000
Dec.	5,780,501	7,375,641	7,780,779	7,728,224	8,355,311	8,980,676	9,680,182	7,946,328	8,287,073	10,503,519	10,837,545	*7,420,285	*8,531,000
Total	68,602,706	84,884,071	88,640,470	77,978,176	96,836,075	106,199,046	93,153,378	111,006,719	88,311,652	117,036,085	115,216,149	*112,714,996	*85,000,000

* Estimate.

† Preliminary.

Source: American Iron and Steel Institute.

Financial analysis of steel industry . . . Twenty-nine steel producers covered represent 93.5 per cent of U.S. ingot capacity.

STEEL INDUSTRY

FINANCIAL ANALYSIS OF THE STEEL INDUSTRY

For years 1951 through 1957. Data Cover 29 Companies Representing 93.5 Pct of U. S. Ingot Capacity

COMPANY	Year	Ingot Capacity Net Tons	Ingot Production Net Tons	Percent of Capacity Operated	Steel Shipments Net Tons	Net Sales and Operating Revenue	Provision for Federal Income Taxes	Net Income	Net Income Percent of Sales	Earnings Per Common Share	Invested Capital
U. S. Steel Corp.	1957	39,582,000	33,738,000	85.2	23,414,000	\$4,413,806,173	\$406,000,000	\$419,406,956	9.5	\$7.33	\$3,214,366,449
	1956	39,582,000	33,402,000	85.2	23,911,000	4,228,877,241	331,000,000	348,088,916	8.2	6.01	3,008,996,483
	1955	38,877,000	35,309,000	90.8	25,508,000	4,007,680,287	366,000,000	370,099,353	9.0	6.44	2,868,655,585
	1954	38,715,000	28,355,000	73.2	20,239,000	3,250,369,279	190,000,000	195,417,611	6.0	6.46	2,672,832,918
	1953	38,399,000	35,827,000	98.4	25,091,000	3,861,034,728	323,000,000	222,087,840	5.8	7.54	2,319,132,239
Bethlehem Steel Corp.	1957	20,500,000	19,123,201	93.3	13,538,705	2,624,913,123	175,000,000	191,025,933	7.3	4.13	1,759,004,878
	1956	20,000,000	18,322,308	91.6	13,189,783	2,343,478,150	147,000,000	161,411,825	6.9	15.33	1,608,356,409
	1955	19,100,000	18,820,912	98.5	13,553,823	2,114,599,638	181,000,000	180,181,708	8.5	18.09	1,522,975,045
	1954	18,500,000	13,810,078	74.6	10,228,752	1,667,377,179	119,000,000	132,837,154	8.0	13.18	1,232,904,615
	1953	17,600,000	17,682,687	100.4	12,712,994	2,094,952,155	161,000,000	133,947,837	6.4	13.30	1,163,636,586
Republic Steel Corp.	1957	11,047,000	8,484,615	76.8	6,211,485	1,227,257,507	89,600,000	85,014,422	6.9	5.45	773,190,575
	1956	10,202,000	9,348,898	91.1	6,783,307	1,244,214,346	94,700,000	90,406,685	7.3	5.83	698,248,994
	1955	10,262,000	9,680,121	97.1	6,888,782	1,188,559,765	84,000,000	86,271,491	7.3	5.59	650,126,615
	1954	10,262,000	8,972,812	89.8	5,012,330	846,310,670	49,900,000	52,875,164	6.2	7.10	629,318,251
	1953	10,262,000	9,630,484	94.5	7,135,745	1,137,123,547	100,500,000	56,743,547	5.0	9.25	620,678,235
Jones & Laughlin Steel Corp.	1957	6,900,000	6,048,000	88.0	4,272,000	837,568,000	39,901,000	45,452,000	5.4	5.65	647,694,000
	1956	6,166,500	5,997,000	97.0	4,341,000	742,842,000	39,380,000	45,122,000	6.1	6.63	581,426,000
	1955	6,166,500	6,190,000	100.0	4,418,000	696,538,000	40,500,000	50,104,000	7.2	7.73	526,212,000
	1954	6,166,500	4,570,000	74.0	3,203,000	492,941,000	22,543,000	25,032,000	5.1	3.80	497,439,000
	1953	6,166,500	6,033,000	96.0	4,278,000	624,387,000	27,900,000	31,015,000	5.0	4.77	492,373,000
Youngstown Sheet & Tube Co.	1957	6,240,000	5,137,834	82.3	3,593,375	679,885,073	39,488,000	42,508,579	6.25	12.35	531,846,128
	1956	5,780,000	5,406,016	94.0	3,539,224	684,041,021	37,329,000	43,174,567	6.31	12.62	486,364,512
	1955	5,520,000	5,571,556	100.9	3,844,492	626,232,540	41,867,500	41,701,140	6.8	12.34	462,080,771
	1954	5,520,000	3,868,525	70.1	2,806,540	433,406,272	12,104,000	20,162,500	4.7	6.02	432,764,332
	1953	4,947,500	5,091,878	102.9	3,679,229	584,059,058	27,900,000	30,839,716	5.6	9.21	424,993,129
National Steel Corp.	1957	6,200,000	5,326,425	86.0	3,607,723	640,957,342	43,550,000	45,518,884	7.1	6.13	551,004,815
	1956	6,000,000	5,326,425	88.8	3,607,723	664,251,090	47,000,000	52,502,422	7.9	7.09	532,312,345
	1955	6,000,000	5,326,425	88.8	3,607,723	622,018,919	48,275,000	48,289,453	7.8	6.54	452,911,987
	1954	6,000,000	4,380,000	73.0	3,000,000	484,058,380	27,750,000	30,334,871	6.3	4.12	427,082,106
	1953	5,950,000	5,326,425	89.5	3,607,723	634,178,060	49,325,000	50,334,130	7.9	6.84	418,230,307
Armco Steel Corp.	1957	5,950,000	5,406,648	90.9	3,807,723	776,736,401	54,521,298	55,044,509	7.09	4.59	603,150,901
	1956	5,150,000	5,220,147	101.4	3,836,108	761,800,102	63,290,322	65,593,182	8.61	6.03	490,309,799
	1955	4,950,000	5,099,905	103.0	4,003,532	692,853,234	66,813,787	64,350,609	9.3	6.06	444,015,785
	1954	4,902,000	4,448,772	90.8	3,171,401	532,045,314	42,522,317	41,100,266	7.7	7.86	403,749,452
	1953	4,718,000	4,704,773	99.7	3,375,630	588,919,900	50,788,608	33,902,462	5.8	6.50	388,931,246
Inland Steel Co.	1957	5,500,000	5,502,000	100.0	4,041,130	772,380,683	60,555,000	58,876,875	7.7	10.34	582,774,294
	1956	5,200,000	4,915,576	94.5	3,852,719	731,767,767	55,142,000	52,988,728	7.3	9.43	497,757,699
	1955	5,000,000	5,189,509	103.8	3,954,567	663,317,374	53,050,000	52,466,098	8.0	9.52	416,415,101
	1954	4,700,000	4,522,257	96.2	3,392,659	537,024,479	37,930,000	41,287,152	7.7	7.92	287,259,955
	1953	4,500,000	4,513,076	100.3	3,712,000	579,509,058	39,379,000	33,867,184	5.9	6.90	344,168,324
Colorado Fuel & Iron Corp.	1957	2,799,500	2,163,594	77.3	1,615,406	340,755,160	14,926,000	14,236,351	4.18	4.04	197,115,765
	1956	2,471,500	2,401,231	97.16	2,134,490	341,630,224	16,891,800	16,862,853	4.9	4.74	189,184,650
	1955	2,471,500	1,836,402	78.35	1,627,587	257,543,050	10,681,800	10,887,163	4.2	3.79	170,325,365
	1954	2,469,035	1,845,693	74.8	1,687,950	250,235,696	6,125,000	7,051,729	2.8	2.46	167,132,675
	1953	2,311,785	2,130,451	92.2	1,940,414	248,835,574	14,572,400	8,031,224	3.2	3.09	166,458,029
Wheeling Steel Corp.	1957	2,200,000	1,828,534	83.1	1,249,796	249,796,955	10,116,000	12,077,698	4.84	5.32	237,041,083
	1956	2,130,000	1,994,745	93.7	1,249,796	259,554,918	18,630,000	17,672,276	6.81	8.20	236,452,196
	1955	2,130,000	2,057,285	96.6	1,249,796	249,455,016	18,480,000	17,295,711	6.9	8.12	229,796,667
	1954	2,130,000	1,589,643	74.6	1,000,000	190,224,955	8,483,000	9,595,740	5.0	5.48	205,866,412
	1953	1,860,000	1,797,419	96.6	1,249,796	219,509,774	14,036,000	12,456,311	5.7	7.49	205,968,477
Sharon Steel Corp.	1957	1,898,000	1,204,283	63.5	859,503	151,651,624	3,606,000	4,048,773	2.7	3.66	92,062,963
	1956	1,763,000	1,508,660	85.6	1,126,612	180,044,408	6,473,000	6,906,539	3.8	6.28	82,716,190
	1955	1,650,000	1,528,686	98.6	1,092,593	173,086,949	7,940,000	7,967,622	4.6	7.26	73,098,951
	1954	1,550,000	848,515	54.6	611,068	99,347,910	1,865,000	3,134,864	3.2	2.85	68,711,329
	1953	1,550,000	1,527,706	98.6	1,144,468	168,268,508	7,240,000	6,709,625	4.0	6.10	69,306,465
McLouth Steel Corp.	1957	1,574,000	1,534,240	97.5	1,122,335	179,458,165	5,562,000	9,409,977	5.2	5.37	153,069,766
	1956	1,380,000	1,372,592	99.5	1,062,877	163,906,619	9,110,000	8,806,258	5.4	5.01	123,232,929
	1955	1,200,000	1,200,000	100.0	960,000	144,987,476	7,375,000	8,148,342	5.6	5.66	127,716,528
	1954	960,000	434,320	45.4	369,667	100,000,000	2,090,000	1,694,890	1.6	1.42	132,513,536
	1953	579,700	528,734	91.2	412,000	115,600,000	11,560,000	5,241,501	4.5	4.41	94,027,396
Kaiser Steel Corp.	1957	1,536,000	1,580,322	103.5	1,043,620	208,619,403	9,300,000	21,438,507	10.3	5.91	373,126,516
	1956	1,536,000	1,617,661	105.3	1,140,776	201,489,824	12,055,000	23,571,852	11.7	6.57	245,177,553
	1955	1,536,000	1,432,742	93.3	929,558	136,148,919	6,471,000	5,471,236	4.2	1.06	245,329,442
	1954	1,536,000	1,362,877	88.8	933,843	128,491,032	3,325,000	7,926,666	6.2	1.75	245,984,649
	1953	1,536,000	1,456,904	100.1	991,897	134,500,041	9,700,000	9,121,284	6.8	2.12	240,947,614
Detroit Steel Corp.	1957	1,500,000	862,477	57.5	480,911	82,458,616	3,348,000	3,004,382	3.6	0.90	84,544,546
	1956	1,290,000	1,032,237	80.0	909,261	123,616,057	9,015,000	8,747,092	7.1	2.76	87,696,369
	1955	1,290,000	888,443	68.9	787,788	101,803,010	6,715,968	6,317,960	6.2	2.07	85,693,209
	1954	860,000	442,753	51.5	371,061	51,688,448	71,338	1,182,528	2.3	0.49	40,265,485
	1953	860,000	829,044	96.4	583,421	93,381,509	6,812,624	5,230,259	5.6	2.16	39,062,957
Crucible Steel Co. of America	1957	1,423,400	1,423,400	100.0	1,000,000	235,938,306	5,630,000	6,543,584	2.8	1.73	141,257,392
	1956	1,423,400	1,423,400	100.0	1,000,000	263,922,696	12,910,000	12,767,625	4.8	7.02	140,460,520
	1955	1,351,400	1,351,400	100.0	1,000,000	237,715,380	16,570,000	13,206,002	5.6	6.06	128,847,821
	1954	1,351,400	1,222,176	90.4	900,000	190,621,738	4,396,000	3,706,952	2.3	2.53	119,995,023
	1953	1,351,400	1,351,400	100.0	1,000,000	232,276,349	6,696,979	5,106,902	2.2	5.20	122,320,246

STEEL INDUSTRY

Financial analysis of steel industry showing capacity, sales earnings data, shipments, production, etc., by company.

FINANCIAL ANALYSIS (Continued)

COMPANY	Year	Ingot Capacity Net Tons	Ingot Production Net Tons	Percent of Capacity Operated	Steel Shipments Net Tons	Net Sales and Operating Revenue	Provision for Federal Income Taxes	Net Income	Net Income Percent of Sales	Earnings Per Common Share	Invested Capital
Pittsburgh Steel Co.	1957	1,320,000	1,223,534	91.0	1,018,756	\$183,260,331	\$1,516,000	\$4,155,000	2.28	\$1.80	\$124,195,837
	1956	1,320,000	1,139,882	86.4	1,077,610	179,133,961	3,404,000	6,225,000	3.49	3.24	125,912,965
	1955	1,320,000	1,303,503	98.8	1,132,437	177,707,556	4,372,000	7,515,470	4.3	4.31	118,397,226
	1954	1,320,000	1,070,385	76.2	784,420	124,489,418	973,000	2,170,694	1.8	0.82	116,385,912
	1953	1,404,000	1,037,335	86.4	1,009,511	141,471,302	5,310,000	4,648,195	3.3	2.61	114,528,878
Granite City Steel Co.	1957	1,200,000	1,116,698	93.1	894,062	123,763,490	10,829,000	9,984,451	8.1	4.64	118,827,377
	1956	1,080,000	1,151,820	107.0	1,057,932	137,131,233	15,800,000	15,109,411	11.0	7.04	113,844,912
	1955	1,080,000	1,081,389	101.0	961,101	116,293,657	13,703,700	12,610,820	11.0	6.05	102,436,342
	1954	1,080,000	634,909	58.8	589,112	99,265,197	4,400,700	4,012,192	5.8	2.04	90,232,973
	1953	720,000	937,801	130.3	805,455	87,856,006	6,953,500	6,488,452	7.4	3.77	90,878,115
Allegheny Ludlum Steel Corp.	1957	864,200	485,260	57.3	352,989	267,647,586	13,441,000	11,651,851	4.35	3.02	144,990,574
	1956	864,200	666,918	77.2	453,822	287,078,052	16,067,000	15,261,090	5.32	4.04	140,683,861
	1955	864,200	683,195	79.1	464,231	255,587,054	16,954,000	14,885,660	5.9	8.25	121,125,921
	1954	864,200	431,068	49.9	305,208	170,056,405	4,459,000	4,246,083	2.5	2.30	80,073,450
	1953	864,200	680,619	78.8	537,341	242,091,548	11,670,000	7,791,287	3.2	4.40	79,561,960
Barium Steel Corp.	1957	846,760	585,993	69.0	83,885,112	3,536,000	3,062,996	3.65	0.74	35,575,755	
	1956	893,000	732,600	82.0	119,536,637	8,118,951	7,009,956	5.86	1.98	37,808,634	
	1955	893,000	520,900	58.3	75,064,700	985,255	655,319	0.9	0.20	22,822,652	
	1954	893,000	237,000	26.5	53,484,604	1,772,500	441,212	0.8	0.14	22,222,682	
	1953	893,000	497,790	55.7	89,719,175	3,849,840	2,321,140	2.6	1.01	21,097,017	
Northwestern Steel & Wire Co.	1957	825,000	703,732	85.3	548,419	78,105,122	6,630,000	5,225,418	6.7	2.09	35,025,803
	1956	825,000	692,326	83.9	585,816	74,157,804	5,766,000	5,076,959	6.8	2.07	32,971,850
	1955	825,000	502,443	60.9	391,675	51,403,405	4,810,000	4,131,969	8.0	5.05	29,588,467
	1954	825,000	308,780	37.4	246,170	35,628,171	1,065,000	1,018,754	2.9	1.25	17,127,634
	1953	825,000	361,550	43.8	336,056	44,291,906	485,000	303,163	0.7	0.37	15,838,880
Alan Weir Steel Co.	1957	800,000	655,536	81.9	437,619	67,869,893	1,047,000	2,054,046	3.0	2.50	38,330,232
	1956	625,000	713,859	109.1	495,098	69,330,353	2,024,000	3,095,727	4.5	4.04	36,653,835
	1955	625,000	665,908	106.5	58,378,609	1,619,000	2,551,530	4.4	3.32	35,951,282	
	1954	625,000	345,918	55.3	241,288	36,065,476	216,000	1,246,251	3.4	1.42	36,647,492
	1953	625,000	598,334	95.7	442,537	59,756,645	2,457,000	3,213,690	5.4	4.63	31,561,852
Lukens Steel Co.	1957	750,000	758,212	101.1	566,521	130,473,207	11,687,000	10,119,998	7.8	10.61	43,062,618
	1956	750,000	703,434	93.8	512,735	105,173,825	7,675,000	7,504,889	7.1	23.60	39,593,684
	1955	750,000	691,444	92.2	490,569	79,307,572	2,400,000	1,731,238	2.2	5.44	34,334,613
	1954	675,000	631,834	93.6	455,153	74,954,710	2,065,000	2,014,791	2.7	6.33	33,589,833
	1953	675,000	763,879	113.2	590,635	97,850,937	9,325,000	3,607,713	3.7	11.35	30,675,958
Copperweld Steel Co.	1957	660,000	660,000	100.0	121,094,351	2,500,000	2,789,855	2.3	2.41	55,480,262	
	1956	660,000	660,000	100.0	100,541,926	4,220,000	3,440,872	3.4	4.06	40,267,983	
	1955	618,380	618,380	100.0	78,490,150	2,990,000	2,365,459	3.0	2.61	35,574,896	
	1954	618,380	618,380	100.0	49,684,295	520,000	827,005	1.9	1.32	29,284,898	
	1953	618,380	618,380	100.0	83,993,418	3,120,000	2,852,076	3.4	5.05	24,223,760	
Acme Steel Co.	1957	608,000	383,550	63.0	717,395	147,749,000	6,186,000	6,016,000	4.07	2.40	88,457,000
	1956	608,000	564,331	92.0	925,446	134,236,000	7,197,000	7,012,000	5.22	3.34	70,431,000
Lone Star Steel Co.	1957	550,000	666,853	121.2	489,228	95,340,258	11,570,000	11,329,508	11.8	3.90	103,203,078
	1956	550,000	629,679	114.4	485,269	88,650,577	11,000,000	10,151,383	11.5	3.64	100,373,570
	1955	550,000	556,304	101.0	442,762	74,489,168	4,685,000	4,759,086	6.4	1.80	102,838,298
	1954	550,000	379,009	69.0	184,497	37,208,044	1,008,778	1,008,778	2.7	0.38	105,038,385
Laclede Steel Co.	1957	500,000	452,005	90.9	352,526	82,225,543	4,675,000	3,836,846	6.17	16.81	30,283,503
	1956	500,000	505,575	101.1	398,181	66,509,030	4,575,000	4,086,071	6.14	19.81	26,832,521
	1955	500,000	473,708	94.7	386,408	58,191,338	4,700,000	4,047,053	7.0	19.82	24,656,700
	1954	500,000	396,023	79.2	311,140	45,364,073	3,050,000	2,943,150	6.5	14.27	22,106,596
	1953	440,000	427,514	97.2	362,040	50,634,318	4,975,000	2,703,895	5.3	13.11	20,736,280
Keystone Steel & Wire Co.	1957	450,000	395,236	87.8	290,364	59,739,437	6,393,924	6,496,163	10.86	3.47	38,308,003
	1956	450,000	438,364	97.41	353,019	68,629,700	7,993,443	8,013,050	12.03	4.27	35,559,840
	1955	425,000	416,090	97.90	344,414	62,020,363	8,830,268	8,768,519	14.1	4.68	31,296,790
	1954	425,000	334,444	78.7	275,229	49,332,276	6,861,536	6,114,772	12.4	3.26	26,278,271
	1953	425,000	356,988	84.0	268,709	44,554,153	4,661,627	4,149,948	9.3	2.21	23,163,498
Continental Steel Corp.	1957	420,000	338,568	80.6	231,680	42,657,749	3,130,000	2,756,655	6.46	5.34	25,689,821
	1956	394,000	368,058	93.4	272,996	46,703,332	2,810,000	2,793,674	5.98	5.87	24,135,915
	1955	394,000	324,380	82.3	285,972	44,881,747	2,780,000	3,022,143	6.7	6.02	22,921,084
	1954	394,000	336,149	85.3	232,108	35,661,856	1,800,000	1,993,337	5.6	3.97	21,603,024
	1953	394,000	362,048	91.9	252,625	36,761,804	1,700,000	1,803,163	4.4	3.20	20,812,409
Atlantic Steel Co.	1957	400,000	229,607	57.4	175,453	26,115,984	327,000	348,182	1.24	0.76	12,594,961
	1956	400,000	226,970	56.7	188,657	28,765,487	910,114	835,920	2.90	2.07	12,313,705
GRAND TOTALS	1957	125,043,860	105,500,000	84.5	74,300,000	\$14,904,100,664	\$992,530,516	\$1,083,416,706	7.3	5.65	\$16,836,555,256
	1956	119,410,000	107,000,000*	89.8	77,300,000*	14,329,463,893	1,050,802,715	1,044,506,967	7.2	6.96	9,790,957,624
	1955	117,237,517	109,000,000	93.0	78,800,000	13,225,990,770	1,027,297,914	1,034,621,581	7.8	7.16	9,132,827,147
	1954	115,324,652	81,900,000	71.0	58,700,000	8,977,835,497	553,857,391	600,383,984	6.0	5.99	8,205,155,029
	1953	109,686,940	104,200,000	94.9	74,800,000	12,285,361,086	832,760,178	690,920,244	5.6	.....	7,707,624,267

Estimated on operating rate

Steel Prices: Hot and cold rolled sheet and strip, galvanized sheets, tinplate and high-speed tool steel.

STEEL INDUSTRY

COLD-ROLLED STRIP

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	3.20	3.55	4.00	4.20	4.75	4.85
Feb.	3.20	3.55	4.00	4.21	4.75	4.85
Mar.	3.20	3.55	4.00	4.21	4.75	4.85
Apr.	3.20	3.55	4.00	4.21	4.75	4.85
May	3.20	3.53	4.00	4.21	4.75	4.85
June	3.20	3.53	4.00	4.21	4.75	4.85
July	3.27	3.85	4.00	4.21	4.75	4.74
Aug.	3.55	4.00	4.00	4.21	4.75	5.10
Sept.	3.55	4.00	4.00	4.21	4.75	5.10
Oct.	3.55	4.00	4.00	4.21	4.75	5.10
Nov.	3.55	4.00	4.00	4.21	4.75	5.10
Dec.	3.55	4.00	4.06	4.75	4.75	5.10
Average	3.35	3.76	4.01	4.25	4.75	4.85

	1953	1954	1955	1956	1957	1958
Jan.	5.10	5.45	5.75	6.25	6.85	7.170
Feb.	5.10	5.45	5.75	6.25	6.85	7.170
Mar.	5.10	5.45	5.75	6.25	6.85	7.170
Apr.	5.10	5.45	5.75	6.25	6.85	7.170
May	5.10	5.45	5.75	6.25	6.85	7.170
June	5.25	5.45	5.75	6.25	6.85	7.170
July	5.45	5.75	6.12	6.25	7.17	7.170
Aug.	5.45	5.75	6.25	6.61	7.17	7.425
Sept.	5.45	5.75	6.25	6.85	7.17	7.425
Oct.	5.45	5.75	6.25	6.85	7.17	7.425
Nov.	5.45	5.75	6.25	6.85	7.17	7.425
Dec.	5.45	5.75	6.25	6.85	7.17	7.425
Average	5.29	5.60	5.98	6.48	7.01	7.276

COLD-ROLLED SHEETS

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	3.20	3.55	4.00	4.10	4.35	4.35
Feb.	3.20	3.55	4.00	4.10	4.35	4.35
Mar.	3.20	3.55	4.00	4.10	4.35	4.35
Apr.	3.20	3.55	4.00	4.10	4.35	4.35
May	3.20	3.49	4.00	4.10	4.35	4.35
June	3.20	3.49	4.00	4.10	4.35	4.35
July	3.27	3.82	4.00	4.10	4.35	4.395
Aug.	3.55	4.00	4.00	4.10	4.35	4.575
Sept.	3.55	4.00	4.00	4.10	4.35	4.575
Oct.	3.55	4.00	4.00	4.10	4.35	4.575
Nov.	3.55	4.00	4.00	4.10	4.35	4.575
Dec.	3.55	4.00	4.04	4.35	4.35	4.575
Average	3.35	3.73	4.00	4.12	4.35	4.449

	1953	1954	1955	1956	1957	1958
Jan.	4.575	4.775	4.95	5.325	5.75	6.050
Feb.	4.575	4.775	4.95	5.325	5.75	6.050
Mar.	4.575	4.775	4.95	5.325	5.75	6.050
Apr.	4.575	4.775	4.95	5.325	5.75	6.050
May	4.575	4.775	4.95	5.325	5.75	6.050
June	4.680	4.775	4.95	5.325	5.75	6.050
July	4.775	4.939	5.231	5.325	6.05	6.050
Aug.	4.775	4.95	5.325	5.580	6.05	6.275
Sept.	4.775	4.95	5.325	5.75	6.05	6.275
Oct.	4.775	4.95	5.325	5.75	6.05	6.275
Nov.	4.775	4.95	5.325	5.75	6.05	6.275
Dec.	4.775	4.95	5.325	5.75	6.05	6.275
Average	4.682	4.862	5.127	5.488	5.90	6.143

GALVANIZED SHEETS†

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	3.55	3.95	4.40	4.40	4.80	4.80
Feb.	3.55	3.95	4.40	4.40	4.80	4.80
Mar.	3.55	3.95	4.40	4.40	4.80	4.80
Apr.	3.55	3.95	4.40	4.40	4.80	4.80
May	3.55	3.91	4.40	4.40	4.80	4.80
June	3.55	3.91	4.40	4.40	4.80	4.80
July	3.63	4.03	4.40	4.40	4.80	4.855
Aug.	3.95	4.40	4.40	4.40	4.80	5.075
Sept.	3.95	4.40	4.40	4.40	4.80	5.075
Oct.	3.95	4.40	4.40	4.40	4.80	5.075
Nov.	3.95	4.40	4.40	4.40	4.80	5.075
Dec.	3.95	4.40	4.40	4.80	4.80	5.075
Average	3.72	4.13	4.40	4.43	4.80	4.919

	1953	1954	1955	1956	1957	1958
Jan.	5.075	5.275	5.45	5.85	6.30	6.600
Feb.	5.075	5.275	5.45	5.85	6.30	6.600
Mar.	5.075	5.275	5.45	5.85	6.30	6.600
Apr.	5.075	5.275	5.45	5.85	6.30	6.600
May	5.075	5.275	5.45	5.85	6.30	6.600
June	5.160	5.275	5.45	5.85	6.30	6.600
July	5.275	5.439	5.75	5.85	6.60	6.600
Aug.	5.275	5.45	5.85	6.120	6.60	6.875
Sept.	5.275	5.45	5.85	6.120	6.60	6.875
Oct.	5.275	5.45	5.85	6.30	6.60	6.875
Nov.	5.275	5.45	5.85	6.30	6.60	6.875
Dec.	5.275	5.45	5.85	6.30	6.60	6.875
Average	5.182	5.382	5.64	6.023	6.45	6.715

† Hot-dipped, 10 ga.

HOT-ROLLED SHEETS

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	2.50	2.80	3.25	3.35	3.60	3.60
Feb.	2.50	2.80	3.25	3.35	3.60	3.60
Mar.	2.50	2.80	3.25	3.35	3.60	3.60
Apr.	2.50	2.80	3.25	3.35	3.60	3.60
May	2.50	2.77	3.25	3.35	3.60	3.60
June	2.50	2.77	3.25	3.35	3.60	3.60
July	2.56	2.89	3.25	3.35	3.60	3.635
Aug.	2.80	3.25	3.25	3.35	3.60	3.775
Sept.	2.80	3.25	3.25	3.35	3.60	3.775
Oct.	2.80	3.25	3.25	3.35	3.60	3.775
Nov.	2.80	3.25	3.25	3.35	3.60	3.775
Dec.	2.80	3.25	3.29	3.60	3.60	3.775
Average	2.63	3.00	3.28	3.37	3.60	3.676

	1953	1954	1955	1956	1957	1958
Jan.	3.775	3.925	4.05	4.325	4.675	4.925
Feb.	3.775	3.925	4.05	4.325	4.675	4.925
Mar.	3.775	3.925	4.05	4.325	4.675	4.925
Apr.	3.775	3.925	4.05	4.325	4.675	4.925
May	3.775	3.925	4.05	4.325	4.675	4.925
June	3.838	3.925	4.05	4.325	4.675	4.925
July	3.925	4.042	4.26	4.325	4.925	4.925
Aug.	3.925	4.05	4.325	4.535	4.925	5.100
Sept.	3.925	4.05	4.325	4.675	4.925	5.100
Oct.	3.925	4.05	4.325	4.675	4.925	5.100
Nov.	3.925	4.05	4.325	4.675	4.925	5.100
Dec.	3.925	4.05	4.325	4.675	4.925	5.100
Average	3.855	3.987	4.189	4.459	4.800	4.995

HOT-ROLLED STRIP

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	2.50	2.80	3.25	3.25	3.50	3.50
Feb.	2.50	2.80	3.25	3.25	3.50	3.50
Mar.	2.50	2.80	3.25	3.25	3.50	3.50
Apr.	2.50	2.80	3.25	3.25	3.50	3.50
May	2.50	2.80	3.25	3.25	3.50	3.50
June	2.50	2.80	3.25	3.25	3.50	3.50
July	2.58	2.90	3.25	3.25	3.50	3.545
Aug.	2.80	3.25	3.25	3.25	3.50	3.725
Sept.	2.80	3.25	3.25	3.25	3.50	3.725
Oct.	2.80	3.25	3.25	3.25	3.50	3.725
Nov.	2.80	3.25	3.25	3.25	3.50	3.725
Dec.	2.80	3.25	3.25	3.60	3.50	3.725
Average	2.63	3.03	3.26	3.27	3.50	3.606

	1953	1954	1955	1956	1957	1958
Jan.	3.725	3.925	4.05	4.325	4.675	4.925
Feb.	3.725	3.925	4.05	4.325	4.675	4.925
Mar.	3.725	3.925	4.05	4.325	4.675	4.925
Apr.	3.725	3.925	4.05	4.325	4.675	4.925
May	3.725	3.925	4.05	4.325	4.675	4.925
June	3.810	3.925	4.05	4.325	4.675	4.925
July	3.925	4.042	4.256	4.325	4.925	4.925
Aug.	3.925	4.05	4.325	4.535	4.925	5.100
Sept.	3.925	4.05	4.325	4.675	4.925	5.100
Oct.	3.925	4.05	4.325	4.675	4.925	5.100
Nov.	3.925	4.05	4.325	4.675	4.925	5.100
Dec.	3.925	4.05	4.325	4.675	4.925	5.100
Average	3.832	3.987	4.181	4.458	4.80	4.998

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	2.85	2.95	3.50	3.50	3.70	3.70
Feb.	2.85	2.95	3.50	3.50	3.70	3.70
Mar.	2.85	2.95	3.50	3.50	3.70	3.70
Apr.	2.85	2.95	3.50	3.50	3.70	3.70
May	2.85	2.93	3.40	3.50	3.70	3.70
June	2.71	2.93	3.40	3.50	3.70	3.70
July	2.95	3.07	3.40	3.50	3.70	3.74
Aug.	2.95	3.50	3.40	3.50	3.70	3.90
Sept.	2.95	3.50	3.40	3.50	3.70	3.90
Oct.	2.95	3.50	3.40	3.50	3.70	3.90
Nov.	2.95	3.50	3.40	3.50	3.70	3.90
Dec.	2.95	3.50	3.44	3.70	3.70	3.90
Average	2.80	3.19	3.43	3.52	3.70	3.78

	1953	1954	1955	1956	1957	1958
Jan.	3.90	4.10	4.225	4.50	4.85	5.12
Feb.	3.90	4.10	4.225	4.50	4.85	5.12
Mar.	3.90	4.10	4.225	4.50	4.85	5.12
Apr.	3.90	4.10	4.225	4.50	4.85	5.12
May	3.90	4.10	4.225	4.50	4.85	5.12
June	3.98	4.10	4.225	4.50	4.85	5.12
July	4.10	4.217	4.431	4.50	5.10	5.12
Aug.	4.10	4.225	4.50	4.71	5.10	5.30
Sept.	4.10	4.225	4.50	4.85	5.10	5.30
Oct.	4.10	4.225	4.50	4.85	5.10	5.30
Nov.	4.10	4.225	4.50	4.85	5.10	5.30
Dec.	4.10	4.225	4.50	4.85	5.10	5.30
Average	4.01	4.162	4.356	4.63	4.98	5.195

STEEL INDUSTRY

MERCHANT BARS

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	2.60	2.90	3.45	3.45	3.70	3.70
Feb.	2.60	2.90	3.45	3.45	3.70	3.70
Mar.	2.60	2.90	3.45	3.45	3.70	3.70
Apr.	2.60	2.90	3.45	3.45	3.70	3.70
May	2.60	2.87	3.35	3.45	3.70	3.70
June	2.60	2.87	3.35	3.45	3.70	3.70
July	2.86	3.00	3.35	3.45	3.70	3.75
Aug.	2.90	3.45	3.35	3.45	3.70	3.95
Sept.	2.90	3.45	3.35	3.45	3.70	3.95
Oct.	2.90	3.45	3.35	3.45	3.70	3.95
Nov.	2.90	3.45	3.35	3.45	3.70	3.95
Dec.	2.90	3.45	3.35	3.45	3.70	3.95
Average	2.73	3.13	3.37	3.47	3.70	3.79

	1953	1954	1955	1956	1957	1958
Jan.	3.95	4.15	4.30	4.65	5.075	5.425
Feb.	3.95	4.15	4.30	4.65	5.075	5.425
Mar.	3.95	4.15	4.30	4.65	5.075	5.425
Apr.	3.95	4.15	4.30	4.65	5.075	5.425
May	3.95	4.15	4.30	4.65	5.075	5.425
June	4.04	4.15	4.30	4.65	5.075	5.425
July	4.15	4.29	4.56	4.65	5.425	5.425
Aug.	4.15	4.30	4.65	4.905	5.425	5.425
Sept.	4.15	4.30	4.65	5.075	5.425	5.675
Oct.	4.15	4.30	4.65	5.075	5.425	5.675
Nov.	4.15	4.30	4.65	5.075	5.425	5.675
Dec.	4.15	4.30	4.65	5.075	5.425	5.675
Average	4.06	4.22	4.46	4.813	5.220	5.529

MANUFACTURER'S BRIGHT WIRE

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	3.30	3.55	4.33	4.50	4.85	4.85
Feb.	3.30	3.55	4.33	4.50	4.85	4.85
Mar.	3.30	3.55	4.22	4.50	4.85	4.85
Apr.	3.30	3.55	4.15	4.50	4.85	4.85
May	3.30	3.60	4.15	4.50	4.85	4.85
June	3.30	3.60	4.15	4.50	4.85	4.85
July	3.25	3.77	4.15	4.50	4.85	4.925
Aug.	3.55	4.33	4.15	4.50	4.85	5.225
Sept.	3.55	4.33	4.15	4.50	4.85	5.225
Oct.	3.55	4.33	4.15	4.50	4.85	5.225
Nov.	3.55	4.33	4.15	4.50	4.85	5.225
Dec.	3.55	4.33	4.29	4.85	4.85	5.225
Average	3.41	3.90	4.20	4.53	4.85	5.012

	1953	1954	1955	1956	1957	1958
Jan.	5.225	5.525	5.75	6.25	7.20	7.650
Feb.	5.225	5.525	5.75	6.25	7.20	7.650
Mar.	5.225	5.525	5.75	6.25	7.20	7.650
Apr.	5.225	5.525	5.75	6.25	7.20	7.650
May	5.225	5.525	5.75	6.25	7.20	7.650
June	5.352	5.525	5.75	6.25	7.20	7.650
July	5.525	5.735	6.125	6.60	7.65	7.650
Aug.	5.525	5.75	6.25	6.96	7.65	8.000
Sept.	5.525	5.75	6.25	7.20	7.65	8.000
Oct.	5.525	5.75	6.25	7.20	7.65	8.000
Nov.	5.525	5.75	6.25	7.20	7.65	8.000
Dec.	5.525	5.75	6.25	7.20	7.65	8.000
Average	5.396	5.638	5.989	6.90	7.43	7.796

STEEL RAILS AT PITTSBURGH, No. 1 OH

Including Prices by Months and Yearly Averages in Dollars Per 100 lb*

	1945	1946	1947	1948	1949	1950	1951
Jan.	\$40.00	\$43.00	\$2.50	\$2.75	\$3.20	\$3.40	\$3.60
Feb.	40.00	43.19*	2.50	2.75	3.20	3.40	3.60
Mar.	42.25	43.39	2.60	2.75	3.20	3.40	3.60
Apr.	43.00	43.39	2.50	2.75	3.20	3.40	3.60
May	43.00	43.39	2.50	2.70	3.20	3.40	3.60
June	43.00	43.39	2.50	2.70	3.20	3.40	3.60
July	43.00	43.39	2.50	2.90	3.20	3.40	3.60
Aug.	43.00	43.39	2.75	3.20	3.20	3.40	3.60
Sept.	43.00	43.39	2.75	3.20	3.20	3.40	3.60
Oct.	43.00	43.39	2.75	3.20	3.20	3.40	3.60
Nov.	43.00	43.39	2.75	3.20	3.20	3.40	3.60
Dec.	43.00	47.36	2.75	3.20	3.28	3.60	3.60
Average	42.44	43.67	2.60	2.93	3.21	3.42	3.60

* Prices quoted dollars per gross ton prior to Feb. 15, 1946. Net ton, Feb. 15 to Dec. 13, 1946.

COLD-FINISHED STEEL BARS

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	3.20	3.55	3.98	4.145	4.55	4.55
Feb.	3.20	3.55	3.98	4.145	4.55	4.55
Mar.	3.20	3.55	3.98	4.145	4.55	4.55
Apr.	3.20	3.55	3.98	4.145	4.55	4.55
May	3.20	3.50	3.98	4.145	4.55	4.55
June	3.20	3.50	3.98	4.145	4.55	4.55
July	3.27	3.82	3.98	4.145	4.55	4.625
Aug.	3.55	3.98	3.98	4.145	4.55	4.925
Sept.	3.55	3.98	3.98	4.145	4.55	4.925
Oct.	3.55	3.98	3.98	4.145	4.55	4.925
Nov.	3.55	3.98	3.98	4.15	4.55	4.925
Dec.	3.55	3.98	4.01	4.55	4.55	4.925
Average	3.35	3.74	3.98	4.179	4.55	4.712

	1953	1954	1955	1956	1957	1958
Jan.	4.925	5.20	5.40	6.25	6.85	7.300
Feb.	4.925	5.20	5.40	6.25	6.85	7.300
Mar.	4.925	5.20	5.40	6.25	6.85	7.300
Apr.	4.925	5.20	5.40	6.25	6.85	7.300
May	4.925	5.20	5.40	6.25	6.85	7.300
June	5.041	5.20	5.40	6.25	6.85	7.300
July	5.20	5.38	5.77	6.25	7.30	7.300
Aug.	5.20	5.40	5.90	6.85	7.30	7.650
Sept.	5.20	5.40	5.90	6.85	7.30	7.650
Oct.	5.20	5.40	5.90	6.85	7.30	7.650
Nov.	5.20	5.40	5.90	6.85	7.30	7.650
Dec.	5.20	5.40	5.90	6.85	7.30	7.650
Average	5.072	5.30	5.63	6.48	7.08	7.446

STRUCTURAL STEEL SHAPES

At Pittsburgh, Cents Per Pound

	1947	1948	1949	1950	1951	1952
Jan.	2.50	2.80	3.25	3.40	3.65	3.65
Feb.	2.50	2.80	3.25	3.40	3.65	3.65
Mar.	2.50	2.80	3.25	3.40	3.65	3.65
Apr.	2.50	2.80	3.25	3.40	3.65	3.65
May	2.50	2.75	3.25	3.40	3.65	3.65
June	2.50	2.75	3.25	3.40	3.65	3.65
July	2.56	2.85	3.25	3.40	3.65	3.69
Aug.	2.80	3.28	3.25	3.40	3.65	3.65
Sept.	2.80	3.25	3.25	3.40	3.65	3.65
Oct.	2.80	3.25	3.25	3.40	3.65	3.65
Nov.	2.80	3.25	3.25	3.40	3.65	3.65
Dec.	2.80	3.25	3.31	3.65	3.65	3.65
Average	2.63	3.00	3.26	3.42	3.65	3.74

	1953	1954	1955	1956	1957	1958
Jan.	3.85	4.10	4.25	4.60	5.00	5.275
Feb.	3.85	4.10	4.25	4.60	5.00	5.275
Mar.	3.85	4.10	4.25	4.60	5.00	5.275
Apr.	3.85	4.10	4.25	4.60	5.00	5.275
May	3.85	4.10	4.25	4.60	5.00	5.275
June	3.96	4.10	4.25	4.60	5.00	5.275
July	4.10	4.24	4.51	4.60	5.275	5.275
Aug.	4.10	4.25	4.60	4.84	5.275	5.500
Sept.	4.10	4.25	4.60	5.00	5.275	5.500
Oct.	4.10	4.25	4.60	5.00	5.275	5.500
Nov.	4.10	4.25	4.60	5.00	5.275	5.500
Dec.	4.10	4.25	4.60	5.00	5.275	5.500
Average	3.98	4.17	4.41	4.75	5.178	5.389

Steel Prices: Hot rolled and cold-finished bars, wire, structurals, rails, pipe and stainless steel sheets.

BUTTWELD STEEL PIPE

At Pittsburgh, Per Net Ton, Carload Lots

	1947	1948	1949	1950	1951	1952
Jan.	\$79.00	\$88.00	\$103.00	\$108.00	\$117.00	\$117.00
Feb.	79.00	81.50	103.00	108.00	117.00	117.00
Mar.	79.00	81.50	103.00	108.00	117.00	117.00
Apr.	79.00	81.50	103.00	108.00	117.00	117.00
May	79.00	84.00	103.00	108.00	117.00	117.00
June	79.00	83.00	103.00	108.00	117.00	117.00
July	79.00	95.00	103.00	108.00	117.00	118.75
Aug.	88.00	103.00	103.00	108.00	117.00	124.00
Sept.	88.00	103.00	103.00	108.00	117.00	124.00
Oct.	88.00	103.00	103.00	108.00	117.00	124.00
Nov.	88.00	103.00	103.00	108.00	117.00	124.00
Dec.	88.00	103.00	108.00	117.00	117.00	124.00
Average	82.75	97.21	103.17	108.75	117.00	120.06

	1953	1954	1955	1956	1957	1958
Jan.	\$124.00	\$136.50	\$141.50	\$152.00	\$164.00	\$176.50
Feb.	124.00	136.50	141.50	152.00	168.50	176.50
Mar.	124.00	136.50	141.50	152.00	168.50	176.50
Apr.	124.00	136.50	141.50	152.00	168.50	176.50
May	125.88	136.50	141.50	152.00	168.50	176.50
June	132.75	136.50	141.50	152.00	168.50	176.50
July	136.50	141.18	151.75	159.00	176.50	176.50
Aug.	136.50	141.50	152.00	164.00	176.50	182.50
Sept.	136.50	141.50	154.00	164.00	176.50	182.50
Oct.	136.50	141.50	154.00	164.00	176.50	182.50
Nov.	136.50	141.50	154.00	164.00	176.50	182.50
Dec.	136.50	141.50	154.00	164.00	176.50	182.50
Average	131.14	138.97	147.56	156.60	171.94	179.09

Computed from list discounts; 1-in. size, Std., T. & C.

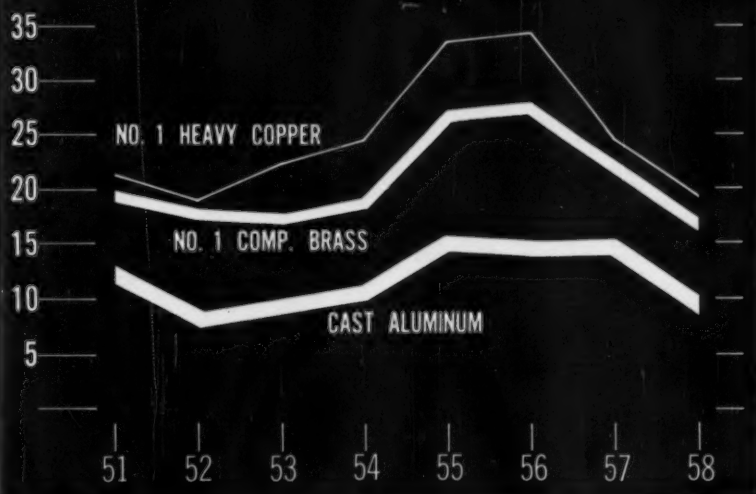
CAST IRON WATER PIPE

At New York, Net Ton, 6-in. and Larger

	1947	1948	1949	1950	1951	1952
Jan.	\$73.60	\$89.18	\$105.95	\$94.95	\$105.00	\$109.00
Feb.	73.75	89.18	105.95	92.36	109.00	109.00
Mar.	76.80	89.18	105.95	91.50	109.00	109.00
Apr.	79.80	89.1	103.98	91.50	109.00	109.00
May	79.80	92.34	94.95	91.50	109.00	109.00
June	79.80	95.50	94.95	91.50	109.00	109.00
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Jan.	80.50	94.95	94.95	91.50	109.00	109.00
Feb.	80.50	94.95	94.95	91.50	109.00	109.00
Mar.	83.20	103.98	94.95	91.50	109.00	111.50
Apr.	83.18	105.95	94.95	95.00	109.00	114.00
May	84.96	105.95	94.95	95.00	109.00	114.00
June	84.18	105.95	94.95	92.00	109.00	114.00
Average	80.25	97.31	96.45	92.98	106.67	110.46

NONFERROUS SCRAP PRICES

Cents per Pound



Nonferrous Metals and Scrap



ALUMINUM SCRAP, CAST

Cents Per Pound, f.o.b. New York*

	1953	1954	1955	1956	1957	1958
Jan.	7.75	8.88	11.50	12.25	11.12	10.38
Feb.	8.63	8.50	12.94	12.25	10.37	10.25
Mar.	9.50	8.85	14.75	12.25	10.25	10.25
Apr.	9.13	10.25	14.63	16.88	10.62	9.88
May	8.25	11.00	12.85	14.05	10.75	9.75
June	9.20	10.00	12.00	11.50	10.75	9.25
July	10.00	10.00	14.38	12.50	10.75	9.25
Aug.	9.25	10.00	16.50	13.00	11.15	9.31
Sept.	9.00	10.75	17.10	13.50	11.25	9.50
Oct.	8.25	11.00	17.13	13.00	11.15	9.50
Nov.	9.63	11.00	17.13	11.75	10.87	9.88
Dec.	10.30	11.00	17.13	12.25	10.75	9.75
Average	9.07	10.10	14.84	14.18	10.82	9.75

* Dealers' Buying Price.

BRASS SCRAP, No. 1 COMP.

Cents Per Pound, f.o.b. New York*

	1953	1954	1955	1956	1957	1958
Jan.	17.75	16.44	21.31	31.50	24.12	18.25
Feb.	18.63	15.75	23.19	31.50	21.75	17.75
Mar.	19.10	17.00	24.10	33.60	20.75	14.38
Apr.	18.56	17.75	25.88	32.12	21.12	14.75
May	16.81	18.88	24.90	27.00	20.95	14.75
June	16.75	19.25	24.94	23.75	20.12	16.00
July	16.75	19.25	26.69	24.00	18.75	15.95
Aug.	15.44	19.25	28.81	25.50	18.50	19.94
Sept.	15.50	19.44	30.25	26.00	16.89	15.75
Oct.	16.06	20.03	29.31	25.75	16.15	17.15
Nov.	16.81	20.70	30.30	23.75	16.00	17.50
Dec.	17.35	21.00	31.75	24.00	15.75	17.75
Average	17.13	18.73	26.79	27.37	19.23	16.41

* Dealers' Buying Price.

No. 1 HEAVY COPPER SCRAP

Cents Per Pound, f.o.b. New York*

	1953	1954	1955	1956	1957	1958
Jan.	19.00	22.63	27.00	41.00	26.63	17.81
Feb.	21.25	22.63	29.19	40.50	23.75	17.25
Mar.	25.70	23.50	30.15	43.40	23.75	16.94
Apr.	23.75	24.00	31.44	40.75	24.09	17.75
May	21.81	24.53	31.05	35.30	23.60	17.85
June	23.15	24.75	33.00	31.25	22.75	19.61
July	23.00	24.75	33.75	30.13	21.25	20.05
Aug.	21.25	24.75	35.63	32.13	20.85	19.96
Sept.	21.50	24.94	36.65	31.38	18.28	19.96
Oct.	22.13	25.83	36.69	29.25	18.95	21.80
Nov.	23.38	25.75	38.25	27.85	19.00	23.66
Dec.	23.55	26.63	41.00	27.75	19.00	23.80
Average	22.46	24.55	33.82	34.21	21.82	19.69

* Dealers' Buying Price.

BRASS INGOTS, 85-5-5-5

No. 115, Cents Per Pound, Cars*

	1953	1954	1955	1956	1957	1958
Jan.	27.25	24.50	30.38	42.00	34.75	26.38
Feb.	27.61	23.75	32.81	42.00	32.25	25.75
Mar.	29.50	23.50	33.80	44.00	31.50	24.88
Apr.	28.00	25.75	37.00	43.50	31.50	25.00
May	28.00	26.50	35.30	40.80	31.10	25.25
June	28.00	27.00	34.50	36.25	30.25	26.31
July	25.63	27.00	36.50	35.50	29.50	27.00
Aug.	24.50	27.45	39.19	37.75	29.35	27.00
Sept.	24.50	28.13	42.50	37.75	27.62	27.00
Oct.	24.50	29.19	41.75	37.06	27.35	28.40
Nov.	24.50	29.50	41.75	35.00	26.75	28.00
Dec.	24.50	30.00	42.00	35.00	26.75	27.75
Average	26.06	26.86	37.29	39.70	29.98	26.56

* Delivered.

INGOT BRASS AND BRONZE

Short Tons of Shipments, Monthly

	1954	1955	1956	1957	1958
Jan.	20,661	25,201	27,738	25,681	20,468
Feb.	19,920	25,349	24,949	20,769	17,413
Mar.	23,653	29,713	28,310	21,948	18,825
Apr.	24,746	27,641	25,808	23,507	18,009
May	22,269	23,708	23,437	22,037	17,191
June	22,348	23,141	18,842	18,888	17,962
July	17,074	18,513	17,364	16,895	16,858
Aug.	21,654	27,013	23,812	19,654	17,882
Sept.	22,464	26,349	20,929	19,670	20,540
Oct.	24,080	25,228	23,045	22,800	23,225
Nov.	23,061	25,102	21,818	19,767	22,500*
Dec.	21,273	21,443	18,046	16,875	20,000*
Total	263,233	298,406	274,096	248,291	230,673*

* Estimate. Source: Brass & Bronze Ingot Institute.

BRONZE INGOTS, 88-10-2

No. 245, Cents Per Pound, Cars*

	1953	1954	1955	1956	1957	1958
Jan.	34.50	29.50	35.13	48.75	39.50	29.88
Feb.	34.88	28.75	37.56	48.75	36.82	29.25
Mar.	36.00	28.50	38.95	50.75	35.50	28.38
Apr.	33.56	31.94	42.25	50.25	35.50	28.50
May	30.25	32.75	40.55	46.80	35.10	28.75
June	30.25	33.25	39.75	42.25	34.22	30.00
July	30.06	33.25	41.75	41.50	33.50	30.75
Aug.	29.50	33.40	45.50	43.80	33.35	30.75
Sept.	29.50	33.69	48.75	43.50	31.25	30.75
Oct.	29.50	34.50	48.00	42.63	30.85	32.15
Nov.	29.50	34.75	48.00	40.00	30.25	32.25
Dec.	29.50	34.75	48.75	40.00	30.25	32.25
Average	31.42	32.42	42.91	44.39	30.82	30.30

* Delivered.

CADMIUM PRICES, STICKS, BARS

Dollars Per Pound, 1 to 5-Ton Lots

August 12, 1948 to November 17, 1948	\$1.90
November 18, 1948 to June 14, 1950	2.00
June 15, 1950 to September 10, 1950	2.15
September 11, 1950 to November 30, 1950	2.40
December 2, 1950 to May 26, 1952	2.55
May 27, 1952 to August 5, 1952	2.25
August 6, 1952 to November 30, 1952	2.00
December 1, 1952 to December 13, 1952	1.50-2.00
December 13, 1952 to January 24, 1953	1.75-2.00
January 25, 1953 to January 31, 1954	2.00
February 1, 1954 to December 25, 1957	1.70
December 26, 1957 to September 30, 1958	1.55
October 1, 1958 to December 31, 1958	1.45

COBALT, 97 TO 99 PCT.

Per Pound, 100 lb Lots Since 1947

April 1, 1949 to December 31, 1950	\$1.80
January 2, 1951 to October 1, 1951	2.10
October 1, 1951 to October 31, 1953	2.40
November 2, 1953 to December 5, 1956	\$2.80 to 2.67
December 6, 1956 to February 13, 1957	2.35 to 2.42
February 14, 1957 to December 31, 1958	2.00 to 2.67

A weekly column on the nonferrous market as well as complete nonferrous and metal powder prices are a regular Iron Age feature.

REMELT ALUMINUM INGOT

No. 12, Cents Per Pound, Cars*

	1953	1954	1955	1956	1957	1958
Jan.	19.50	19.38	23.44	32.00	23.31	22.19
Feb.	20.25	18.66	25.96	30.63	22.62	21.60
Mar.	22.47	19.18	29.85	30.10	22.81	21.38
Apr.	22.75	20.75	29.38	30.25	22.89	21.34
May	22.28	20.38	28.70	27.00	21.70	21.35
June	22.70	19.50	26.80	24.63	21.31	21.38
July	22.59	19.50	26.69	25.19	22.09	21.38
Aug.	22.13	19.75	29.69	27.44	23.00	21.75
Sept.	21.83	20.19	30.35	27.25	22.99	21.75
Oct.	20.28	20.61	30.75	25.75	22.55	21.75
Nov.	20.34	20.88	31.00	24.07	22.50	21.75
Dec.	20.20	21.13	31.25	24.25	22.50	22.00
Average	21.44	20.00	28.41	27.38	22.48	21.63

* Delivered.

NONFERROUS

STRAITS TIN, PROMPT PRICE

Cents Per Pound, at New York

	1947	1948	1949	1950	1951	1952
Jan.	70.00	94.00	\$1.03	75.75	\$1.72	\$1.097
Feb.	70.00	94.00	\$1.03	74.50	\$1.83	\$1.215
Mar.	70.00	94.00	\$1.03	75.62	\$1.45	\$1.215
Apr.	80.00	94.00	\$1.03	76.38	\$1.46	\$1.215
May	80.00	94.00	\$1.03	77.50	\$1.40	\$1.215
June	80.00	\$1.03	\$1.03	77.70	\$1.18	\$1.215
July	80.00	\$1.03	\$1.03	96.68	\$1.06	\$1.215
Aug.	80.00	\$1.03	\$1.03	\$1.02	\$1.03	\$1.212
Sept.	80.00	\$1.03	\$1.02	\$1.01	\$1.03	\$1.213
Oct.	80.00	\$1.03	95.49	\$1.13	\$1.03	\$1.212
Nov.	80.00	\$1.03	90.11	\$1.38	\$1.03	\$1.213
Dec.	85.38	\$1.03	79.06	\$1.45	\$1.03	\$1.215
Average	77.95	99.25	99.22	95.53	\$1.27	\$1.204

	1953	1954	1955	1956	1957	1958
Jan.	\$1.215	84.83	87.28	104.82	101.53	92.94
Feb.	\$1.215	85.04	90.78	100.78	101.06	93.90
Mar.	\$1.214	91.88	91.04	100.87	99.70	94.42
Apr.	\$1.011	96.13	91.40	99.27	99.30	92.95
May	97.50	93.51	91.37	97.01	98.29	92.95
June	92.92	94.19	93.64	94.19	98.06	94.49
July	91.90	96.54	96.82	96.24	96.55	94.89
Aug.	80.71	93.39	96.46	99.08	94.26	94.99
Sept.	82.36	93.52	96.28	103.83	93.44	94.05
Oct.	80.86	93.05	96.09	106.87	91.89	94.46
Nov.	83.11	91.14	97.87	110.91	99.23	99.24
Dec.	84.61	88.57	107.76	108.00	92.38	99.25*
Average	95.70	91.62	94.73	\$1.018	96.31	95.19*

* Estimate

U. S. PRODUCTION OF PRIMARY ALUMINUM (Short tons)

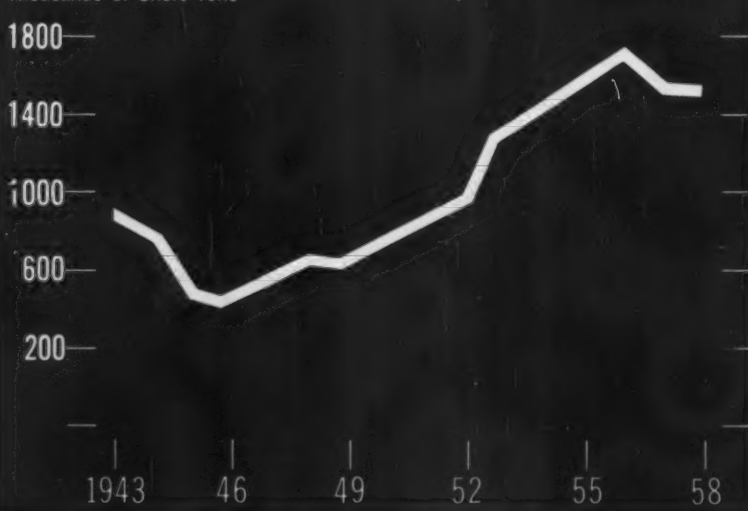
	1950	1951	1952	1953	1954	1955	1956	1957	1958
Jan.	52,023	67,954	76,934	89,895	116,247	128,203	140,394	147,029	139,910
Feb.	50,443	82,740	72,374	82,649	110,483	116,236	132,783	119,059	121,880
Mar.	58,747	70,022	77,069	104,920	122,339	130,272	145,895	135,706	134,019
Apr.	58,024	67,701	76,880	102,071	120,431	126,394	144,726	139,152	124,999
May	61,929	67,720	80,804	105,477	125,144	131,128	150,800	145,174	126,327
June	60,400	67,454	77,476	104,152	120,758	127,633	145,726	138,007	115,326
July	63,518	72,698	78,368	109,285	126,162	132,667	151,624	142,041	118,541
Aug.	63,006	73,816	85,175	110,545	125,296	133,551	152,406	143,448	125,416
Sept.	59,449	69,429	78,682	109,333	120,332	130,606	132,316	129,277	124,713
Oct.	62,916	72,647	77,312	106,219	125,069	134,656	149,125	133,789	137,419
Nov.	62,276	72,246	74,639	105,637	121,252	133,689	145,051	135,024	140,000*
Dec.	65,887	72,454	83,409	110,291	127,035	140,748	148,391	140,036	145,000*
Total	718,622	836,801	937,321	1,252,015	1,458,500	1,595,783	1,678,854	1,647,712	1,583,650*

* Estimate.

Source: U. S. Bureau of Mines and Aluminum Association.

U.S. ALUMINUM PRODUCTION

Thousands of Short Tons



Prices: Straits tin, electrolytic copper, nickel, aluminum, anti-mony and U.S. primary aluminum production.

ANTIMONY, U. S. METAL

Cents Per Pound, F.O.B. Laredo, Tex.

	1953	1954	1955	1956	1957	1958
Jan.	34.50	28.50	28.50	33.50	33.50	33.50
Feb.	34.50	28.50	28.50	33.50	33.50	31.50
Mar.	34.50	28.50	28.50	33.50	33.50	29.50
Apr.	34.50	28.50	28.50	33.50	33.50	29.50
May	34.50	28.50	28.50	33.50	33.50	29.50
June	34.50	28.50	28.50	33.50	33.50	29.50
July	34.50	28.50	28.50	33.50	33.50	29.50
Aug.	34.50	28.50	29.75	33.50	33.50	29.50
Sept.	34.50	28.50	33.50	33.50	33.50	29.50
Oct.	34.50	28.50	33.50	33.50	33.50	29.50
Nov.	33.72	28.50	33.50	33.50	33.50	29.50
Dec.	26.50	26.50	33.50	33.50	33.50	29.50
Average	33.94	28.50	30.27	33.50	33.50	30.00

MAGNESIUM, 99.8 PCT INGOT

Cents Per Pound, at Freeport, Tex.

	1932	1941	1950	1951	1952	1953	1954	1955	1956	1957	1958
1932	29.00	27.00	22.00	22.00	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1933	28.00	22.50	22.50	22.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1934	26.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1935	30.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1936	30.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1937	30.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1938	30.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1939	27.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50
1940	27.00	20.50	20.50	20.50	24.50	24.50	24.50	24.50	24.50	24.50	24.50

ELECTROLYTIC COPPER

Cents Per Pound, Conn. Valley

	1947	1948	1949	1950	1951	1952
Jan.	19.56	21.50	23.50	18.50	24.50	24.50
Feb.	19.75	21.50	23.50	18.50	24.50	24.50
Mar.	21.50	21.50	23.49	18.50	24.50	24.50
Apr.	21.50	21.50	21.72	18.94	24.50	24.50
May	22.83	21.50	18.05	19.92	24.50	24.50
June	21.63	21.50	18.66	22.27	24.50	24.50
July	21.50	21.50	17.33	22.50	24.50	24.50
Aug.	21.50	23.43	17.83	22.54	24.50	24.50
Sept.	21.50	23.60	17.83	23.25	24.50	24.50
Oct.	21.50	23.50	17.83	24.50	24.50	24.50
Nov.	21.50	23.50	18.42	24.50	24.50	24.50
Dec.	21.50	23.50	18.56	24.50	24.50	24.50
Average	21.30	22.33	19.51	21.54	24.50	24.50

	1953	1954	1955	1956	1957	1958
Jan.	24.50	29.75	30.17	43.00	36.00	25.69
Feb.	25.41	29.75	33.00	44.026	33.14	25.00
Mar.	30.58	29.87	33.22	46.00	32.14	25.00
Apr.	30.70	29.87	36.00	46.00	32.00	25.00
May	29.85	30.00	36.00	46.00	32.00	25.00
June	29.88	30.00	36.00	46.00	30.90	25.26
July	29.88	30.00	36.00	41.68	29.25	26.02
Aug.	29.39	30.00	36.26	40.00	28.72	26.50
Sept.	29.50	30.00	43.00	40.01	27.00	26.50
Oct.	29.61	30.00	43.00	39.33	27.00	27.61
Nov.	29.75	30.00	43.00	38.00	27.00	29.00
Dec.	29.75	30.00	43.00	38.00	27.00	29.00*
Average	29.07	29.95	37.55	42.00	30.27	26.30*

* Estimate.

ELECTROLYTIC NICKEL

Cents Per Pound, New York, Duty Paid

July 22, 1948 to Feb. 15, 1949	42.90
Feb. 16, 1949 to Oct. 4, 1949	42.83
Oct. 5, 1949 to May 31, 1950	42.87
June 1, 1950 to Dec. 1, 1950	51.22
Dec. 1, 1950 to June 1, 1951	53.55
June 2, 1951 to Jan. 1, 1953	59.58
Jan. 14, 1953 to Nov. 23, 1954	63.08
(F.O.B., Port Colbourne, Canada)	
Nov. 24, 1954 to Dec. 5, 1956	64.50
Dec. 6, 1956 to Dec. 31, 1958	74.00

ALUMINUM 99 PCT INGOT

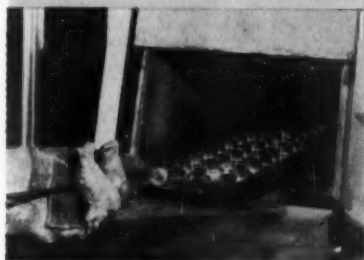
Cents Per Pound, Freight Allowed

	1941*	1948*	1949	1950	1951	1952
Jan.	17.00	15.00	17.00	17.00	19.00	19.00
Feb.	17.00	15.00	17.00	17.00	19.00	19.00
Mar.	17.00	15.00	17.00	17.00	19.00	19.00
Apr.	17.00	15.00	17.00	17.00	19.00	19.00
May	17.00	15.00	17.00	17.20	19.00	19.00
June	17.00	15.00	17.00	17.50	19.00	19.00
July	17.00	16.00	17.00	17.50	19.00	19.00
Aug.	17.00	16.00	17.00	17.50	19.00	20.00
Sept.	17.00	16.00	17.00	17.69	19.00	20.00
Oct.	15.00	16.70	17.00	19.00	19.00	20.00
Nov.	15.00	17.00	17.00	19.00	19.00	20.00
Dec.	15.00	17.00	17.00	19.00	19.00	20.00
Average	16.50	15.66	17.00	17.70	19.00	19.42

	1953	1954	1955	1956	1957	1958
Jan.	20.23	21.50	22.83	24.40	27.10	28.10
Feb.	20.50	21.50	23.20	24.40	27.10	28.10
Mar.	20.50	21.50	23.20	24.50	27.10	28.10
Apr.	20.50	21.50	23.20	25.90	27.10	26.10
May	20.50	21.50	23.20	25.90	27.10	26.10
June	20.50	21.50	23.20	25.90	27.10	26.10
July	20.94	21.50	23.20	25.90	27.10	26.10
Aug.	21.50	22.00	24.40	26.70	28.10	26.80
Sept.	21.50	22.00	24.40	27.10	28.10	26.80
Oct.	21.50	22.00	24.40	27.10	28.10	26.80
Nov.	21.50	22.00	24.40	27.10	28.10	26.80
Dec.	21.50	22.00	24.40	27.10	28.10	26.80
Average	20.93	21.78	23.67	26.00	27.52	26.64

* 1942-1947 incl.: 15.00.

Metal Powders



IRON POWDER PRICES

Cents Per Pound, F.O.B. Mill, Averaged Monthly

	Sponge, 98+ Pct Fe, Carload Lots, -100 Mesh	Electrolytic, Annealed, 99.5+ Pct Fe, -100 Mesh
1952 Average	15.5 to 17.0	43.1
1953 Average	16.35	44.0
1954 Average	16.35	40.75
1955 Average	9.5	36.5
1956 Average	9.5	36.5
1957 Average	9.50	36.5
1958 Average	11.25	29.50 to 33.00

Prices: Lead, zinc . . . U. S. primary magnesium production . . . Metal powder prices including iron, zinc, copper.

LEAD PRICE, COMMON GRADE

Cents Per Pound, at St. Louis

	1946	1947	1948	1949	1950	1951	1952
Jan.	6.50	13.00	15.00	21.50	12.00	17.00	19.00
Feb.	6.50	13.25	15.00	21.50	12.00	17.00	19.00
Mar.	6.50	15.00	15.00	18.98	10.96	17.00	19.00
Apr.	6.50	15.00	17.21	15.15	10.63	17.00	18.91
May	6.50	15.00	17.50	13.72	11.72	17.00	15.73
June	8.18	15.00	17.50	12.00	11.81	17.00	15.08
July	9.18	15.00	17.80	13.56	11.66	17.00	16.00
Aug.	8.25	15.00	19.50	14.99	12.93	17.00	16.00
Sept.	8.25	15.00	19.50	15.05	15.80	17.00	16.00
Oct.	8.25	15.00	19.50	13.42	16.00	18.93	14.40
Nov.	10.41	15.00	21.50	12.52	17.00	19.00	14.18
Dec.	12.20	15.00	21.50	12.52	17.00	19.00	14.13
Average	8.10	14.69	18.04	15.37	13.29	17.49	16.45

	1953	1954	1955	1956	1957	1958
Jan.	14.19	13.26	15.00	15.96	15.80	12.80
Feb.	13.50	12.82	15.00	15.80	15.80	12.80
Mar.	13.40	12.94	15.00	15.80	15.80	12.80
Apr.	12.64	13.91	15.00	15.80	15.80	11.85
May	12.74	14.00	15.00	15.80	15.023	11.52
June	13.41	14.11	15.00	15.80	14.12	11.04

	1953	1954	1955	1956	1957	1958
July	13.68	14.00	14.90	15.80	13.80	10.80
Aug.	14.00	14.06	14.80	15.80	13.80	10.65
Sept.	13.74	14.80	14.94	15.80	13.80	10.88
Oct.	13.50	14.98	15.30	15.50	13.51	12.47
Nov.	13.50	15.00	15.30	15.80	13.80	12.80
Dec.	13.50	15.00	15.30	15.80	12.80	12.80*
Average	13.48	14.06	15.05	15.81	14.45	11.92*

* Estimate.

COPPER POWDER PRICE

Cents per lb, F.O.B. Mill—100 Mesh

	Electrolytic	Reduced
1953 Average	41.49	41.14
1954 Average	43.50	43.50
1955 Average	53.37	53.37
1956 Average	60.50	60.50
1957 Average	45.67	49.75
1958 Average	41.25	48.8

ZINC POWDER PRICE

Cents per lb, F.O.B. Mill—100 Mesh

	23.0 to 30.50
1952 Average	23.0 to 30.50
1953 Average	17.38 to 24.86
1954 Average	17.50 to 25.00
1955 Average	18.50 to 32.25
1956 Average	18.75 to 32.50
1957 Average	18.25 to 31.63
1958 Average	17.5 to 30.7

IMPORTS OF IRON POWDER

Net Tons

	1951	1952	1953	1954	1955	1956	1957	1958
1951	12,880							
1952		5,627						
1953			5,964					
1954				9,835				
1955					10,988			
1956						10,125		
1957							5,000	
1958								600*

* Estimated.

COPPER AND COPPER-BASE SHIPMENTS

Net Tons, Thousands

	1952	1953	1954	1955	1956	1957	1958
1952	15,000						
1953		17,000					
1954			14,800				
1955				21,500			
1956					19,000		
1957						17,900	
1958							15,000*

* Iron Age estimate.

U. S. PRODUCTION OF PRIMARY MAGNESIUM

Short Tons

Month	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
January	1,398	883	988	1,002	1,876	7,425	9,908	6,446	5,089	6,337	7,391	5,272
February	1,232	830	884	913	1,709	7,794	9,078	5,856	4,646	5,908	6,617	3,526
March	1,472	887	988	940	1,885	8,893	10,352	6,545	4,942	6,347	7,383	3,235
April	1,153	801	958	957	2,043	8,900	9,751	6,203	1,859	6,081	7,222	2,772
May	926	797	987	972	2,194	9,093	9,116	6,460	4,277	6,359	7,227	2,469
June	848	786	950	1,175	2,512	8,670	7,286	6,190	4,757	6,098	6,718	1,784
July	905	792	955	1,132	2,998	9,529	6,207	6,049	5,112	1,135	6,598	1,799
August	949	809	970	1,400	3,418	9,771	6,265	5,771	5,850	3,314	6,958	1,845
September	886	819	974	1,635	4,166	8,422	6,076	5,325	5,923	6,128	6,296	1,791
October	912	873	941	1,090	5,147	8,990	6,341	5,149	6,298	6,735	6,278	1,927
November	870	814	969	1,760	6,043	9,123	6,227	4,942	6,130	6,818	5,823	2,100*
December	893	932	1,004	1,942	8,923	9,323	6,467	4,788	6,230	7,085	5,648	2,200*
Total	12,344	10,003	11,598	15,726	40,914	105,833	93,075	69,724	61,131	68,346	78,865	30,720*

Producers' reports to Bureau of Mines and Magnesium Assn.

* Estimate.

SHIPMENTS OF IRON AND IRON-BASE POWDER

Total Net Tons, Major Classes*

	Total	Bearings and Parts	Friction Materials	Electronic & Magnetic Applications	Miscellaneous	Welding Electrodes—Flame Cutting
1947	3,115	1,560	30	600	845	
1948	3,520	1,685	25	990	820	
1949	3,235	1,746	14	935	540	
1950	3,942	1,570	23	1,611	738	
1951	3,651	2,150	1.5	900	600	
1952	4,048	2,109	1.0	336	1,602	
1953	6,255	3,457	14.4	1,599	1,189	
1954	7,835	3,445	75.0	905	3,410	
1955	20,724	9,990	99.5	1,087.5	9,537	
1956	22,193	9,900	144.5	1,071	12,030	
1957	26,389	11,893	217.5	970	1,172	11,137
1958†	23,300	10,943	148.0	1,442	1,047	9,833

* Domestic.

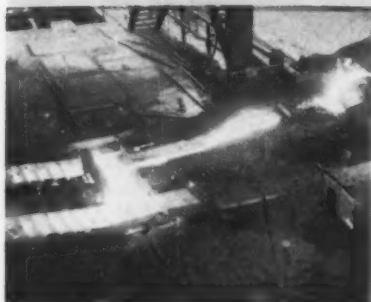
† Estimates.

PRIME WESTERN ZINC PRICE

Cents Per Pound, at E. St. Louis

	1946	1947	1948	1949	1950	1951	1952		1953	1954	1955	1956	1957	1958
Jan.	8.85	11.005	11.69	18.18	18.48	18.22	20.29	Jan.	13.43	10.28	12.00	13.44	13.50	10.00
Feb.	8.85	11.005	12.61	18.20	10.47	18.22	20.25	Feb.	12.31	9.88	12.00	13.50	13.50	10.00
Mar.	8.86	11.005	12.61	17.76	10.66	18.22	20.29	Mar.	11.88	10.18	12.00	13.50	13.50	10.00
Apr.	8.65	11.005	12.61	14.78	11.41	18.25	20.29	Apr.	11.83	10.73	12.43	13.50	13.50	10.00
May	8.65	11.005	12.64	12.58	12.71	18.25	20.33	May	11.83	10.79	12.50	13.50	11.93	10.00
June	8.65	11.005	12.65	10.27	15.49	18.25	18.57	June	11.83	11.46	12.75	13.50	10.84	10.00
July	8.69	11.005	13.09	10.08	15.72	18.25	18.53	July	11.67	11.50	13.00	13.50	10.00	10.00
Aug.	8.89	11.005	15.85	10.70	15.72	18.26	14.86	Aug.	11.53	11.50	13.00	13.50	10.00	10.00
Sept.	8.89	11.005	15.85	10.77	17.52	18.29	14.86	Sept.	10.66	11.98	13.40	13.50	10.00	10.00
Oct.	9.28	11.03	16.74	10.04	18.22	20.22	14.06	Oct.	10.80	12.00	13.50	13.50	10.00	10.00
Nov.	10.86	11.08	17.27	10.46	18.22	20.29	13.33	Nov.	10.80	12.00	13.50	13.50	10.00	11.42
Dec.	10.94	11.06	18.15	10.47	18.22	20.29	13.33	Dec.	10.80	12.00	13.50	13.50	10.00	11.50
Avg.	8.89	11.02	14.20	12.85	14.51	18.75	17.03	Average	11.54	11.19	12.79	13.49	11.38	10.32

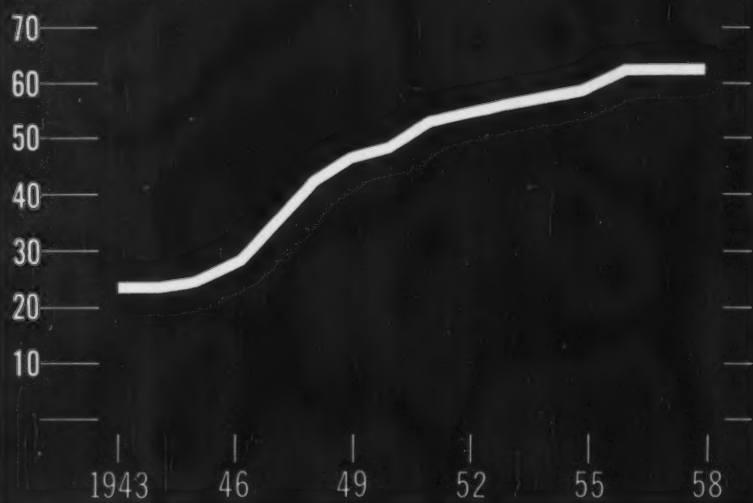
Pig Iron and Iron Ore



PIG IRON PRICES

Dollars per Gross Ton

The Iron Age Composite



COMPOSITE PIG IRON PRICE

Average of THE IRON AGE quotations on basic pig iron at Valley furnaces and foundry iron at Chicago, Birmingham, Buffalo, Valley and Philadelphia, in gross tons.

	1938	1939	1940	1941*	1945*	1946		1947	1948	1949	1950	1951	1952		1953	1954	1955	1956	1957	1958
Jan.	\$23.25	\$20.61	\$22.61	\$23.45	\$23.61	\$25.37	Jan.	\$30.14	\$39.83	\$46.79	\$45.96	\$52.69	\$52.72	Jan.	\$55.26	\$56.59	\$56.59	\$59.09	\$62.90	\$66.42
Feb.	23.25	20.61	22.61	23.45	23.61	25.37	Feb.	30.15	40.27	46.74	46.38	52.69	52.72	Feb.	55.26	56.59	56.59	59.09	62.90	66.42
Mar.	23.25	20.61	22.61	23.53	24.61	25.75	Mar.	32.92	40.32	46.74	46.38	52.69	52.72	Mar.	55.26	56.59	56.59	59.25	64.56	66.49
Apr.	23.25	20.61	22.61	23.61	24.61	26.12	Apr.	33.15	40.11	46.64	46.38	52.69	52.72	Apr.	55.26	56.59	56.59	60.29	64.56	66.49
May	23.25	20.61	22.61	23.61	24.61	26.45	May	33.15	40.33	46.97	46.38	52.69	52.77	May	55.26	56.59	56.59	60.29	64.56	66.49
June	22.98	20.61	22.61	23.61	24.61	28.13	June	33.15	40.51	45.91	46.38	52.69	52.77	June	55.32	56.59	56.59	60.29	64.56	66.49
July	19.61	20.61	22.61	23.61	24.61	28.13	July	34.52	42.25	45.91	46.38	52.69	53.27	July	56.73	56.59	56.46	60.33	65.37	66.49
Aug.	19.61	20.61	22.61	23.61	24.61	28.13	Aug.	36.84	44.34	45.91	46.56	52.69	53.26	Aug.	56.76	56.59	56.09	63.02	66.40	66.49
Sept.	19.62	21.61	22.61	23.61	24.61	28.13	Sept.	38.95	44.96	45.90	47.16	52.69	53.26	Sept.	56.66	56.59	59.09	63.04	66.42	66.41
Oct.	20.57	22.61	22.61	23.61	24.80	28.13	Oct.	38.95	46.63	45.88	49.29	52.72	55.26	Oct.	56.59	56.59	59.09	63.04	66.42	66.41
Nov.	20.61	22.61	22.61	23.61	25.37	28.13	Nov.	37.04	46.62	45.88	49.69	52.72	55.26	Nov.	56.59	56.59	59.09	63.04	66.42	66.41
Dec.	20.61	22.61	22.95	23.61	25.37	29.64	Dec.	37.06	46.62	45.88	52.50	52.72	55.26	Dec.	56.59	56.59	59.09	63.04	66.42	66.41
Average	21.67	21.19	22.64	23.58	24.61	27.29	Average	34.34	42.76	46.18	47.85	52.70	53.62	Average	55.96	56.58	57.78	61.15	65.15	66.45

* Price unchanged at \$23.61 from 1942 through 1944.

PRODUCTION OF PIG IRON AND FERROALLOYS, Net Tons

Year	PIG IRON						FERROALLOYS*				
	Basic	Bessemer	Low Phosphorus	Foundry	Malleable	All Other, Including Direct Castings	Total Pig Iron	Ferromang. and Spiegeleisen	Ferrosilicon and Silvery Pig Iron	All Other Ferroalloys	Total Ferroalloys
1958							57,000,000†				1,450,000†
1957	65,377,744	6,344,106	580,013	2,278,256	3,489,331	334,928	78,375,378	1,040,590	721,139	686,178	2,422,907
1956	61,638,748	6,964,957	504,189	2,396,346	3,467,117	395,132	75,068,469	965,066	809,285	729,678	2,506,969
1955	62,484,889	7,436,354	263,036	2,754,641	3,531,420	387,077	76,657,417	965,174	603,281	647,993	2,406,448
1954	47,023,175	5,652,503	211,893	2,273,032	2,629,682	202,263	57,965,548	749,314	636,694	454,567	1,840,694
1953	59,882,512	8,110,881	297,065	2,900,996	3,784,458	325,517	74,901,429	1,007,248	772,339	569,182	2,348,739
1952	47,511,189	7,445,715	307,478	2,670,210	3,120,166	258,178	61,312,936	820,808	749,059	471,150	2,041,017
1951	54,212,509	9,045,954	314,725	3,050,626	3,363,369	287,096	70,274,278	865,805	819,085	389,375	2,174,265
1950	49,680,440	8,090,608	335,418	2,806,247	3,181,043	293,151	64,586,907	778,881	839,657	196,856	1,813,404
1949	40,905,356	7,059,416	301,520	2,803,912	2,409,436	232,922	53,412,562	675,029	667,322	161,872	1,504,223
1948	46,315,064	7,731,530	384,425	2,768,510	2,990,656	264,031	60,055,216	805,013	842,385	208,945	1,856,343
1947	44,804,743	7,182,207	331,118	2,853,405	2,674,752	182,687	56,328,912	806,725	802,076	184,706	1,788,407
1946	33,727,656	5,832,414	167,013	2,545,936	2,190,265	215,493	44,778,796	540,061	724,141	156,828	1,421,030
1945	39,866,982	8,255,813	314,063	2,248,867	2,350,075	187,648	53,223,169	706,078	617,649	171,933	1,685,860
1944	45,886,008	9,755,836	474,886	2,190,681	2,494,659	204,569	61,007,439	809,636	837,944	211,177	1,858,759

* Including ferroalloys produced in electric furnaces.

† Iron Age estimate.

Source: American Iron and Steel Institute.

CANADIAN BLAST FURNACE PRODUCTION, Net Tons Including Ferroalloys

Year	Pig Iron	Ferroalloys	Total	Year	Pig Iron	Ferroalloys	Total	Year	Pig Iron	Ferroalloys	Total
1935	678,302	61,162	740,464	1943	1,758,269	197,094	1,955,363	1951	2,552,696	250,830	2,803,526
1936	759,618	67,679	827,297	1944	1,852,626	171,323	2,023,951	1952	2,682,065	232,036	2,914,101
1937	1,006,717	91,931	1,098,648	1945	1,777,958	196,978	1,964,936	1953	3,012,269	180,595	3,192,864
1938	789,710	59,720	849,430	1946	1,403,758	116,996	1,520,753	1954	2,213,433	109,833	2,323,266
1939	846,418	55,531	901,949	1947	1,969,847	149,832	2,119,679	1955	3,213,764	166,682	3,380,446
1940	1,309,161	151,661	1,460,822	1948	2,120,909	250,659	2,371,568	1956	3,566,196	242,164	3,808,360
1941	1,528,054	213,218	1,741,272	1949	2,154,352	211,603	2,365,955	1957	3,716,155	230,031	3,946,186
1942	1,975,915	213,636	2,189,551	1950	2,309,732	161,575	2,471,307	1958*	3,053,000	120,000	3,173,000

* Estimated

Source: Dominion Bureau of Statistics.

Prices: Foundry iron at Buffalo, Chicago, Granite City, Valley and Birmingham . . . Basic iron Valley . . . Valley malleable.

PIG IRON

CHICAGO FOUNDRY PIG IRON

Per Gross Ton, at Furnace	1947	1948	1949	1950	1951	1952
Jan.	\$30.50	\$38.75	\$46.50	\$46.50	\$52.50	\$52.50
Feb.	30.50	39.00	46.50	46.50	52.50	52.50
Mar.	33.00	39.00	46.50	46.50	52.50	52.50
Apr.	33.00	39.00	46.50	46.50	52.50	52.50
May	33.00	39.00	46.50	46.50	52.50	52.50
June	33.00	39.00	46.50	46.50	52.50	52.50
July	34.20	42.00	46.50	46.50	52.50	53.00
Aug.	38.00	39.00	46.50	46.50	52.50	55.00
Sept.	38.00	43.00	46.50	47.50	52.50	55.00
Oct.	38.00	46.50	46.50	49.50	52.50	55.00
Nov.	38.00	46.50	46.50	49.50	52.50	55.00
Dec.	36.40	46.50	46.50	52.50	52.50	55.00
Average	34.80	41.77	46.50	47.58	52.50	53.75

	1953	1954	1955	1956	1957	1958
Jan.	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00	\$68.50
Feb.	55.00	56.50	56.50	59.00	63.00	66.50
Mar.	55.00	56.50	56.50	59.00	63.00	66.50
Apr.	55.00	56.50	56.50	60.50	65.00	66.50
May	55.00	56.50	56.50	60.50	65.00	66.50
June	55.00	56.50	56.50	60.50	65.00	66.50
July	56.50	56.50	58.37	60.50	66.50	66.50
Aug.	56.50	56.50	59.00	61.13	66.50	66.50
Sept.	56.50	56.50	59.00	63.00	66.50	66.50
Oct.	56.50	56.50	59.00	63.00	66.50	66.50
Nov.	56.50	56.50	59.00	63.00	66.50	66.50
Dec.	56.50	56.50	59.00	63.00	66.50	66.50
Average	55.75	56.50	57.89	61.01	65.42	66.50

BUFFALO FOUNDRY PIG IRON

Per Gross Ton, at Furnace	1947	1948	1949	1950	1951	1952
Jan.	\$30.50	\$40.37	\$47.26	\$46.50	\$52.50	\$52.50
Feb.	30.50	42.12	47.00	46.50	52.50	52.50
Mar.	32.38	42.45	47.00	46.50	52.50	52.50
Apr.	33.00	41.49	46.75	46.50	52.50	52.50
May	33.00	41.37	46.50	46.50	52.50	52.50
June	33.00	41.44	46.50	46.50	52.50	52.50
July	34.20	42.08	46.50	46.50	52.50	53.00
Aug.	37.37	44.90	46.50	46.50	52.50	55.00
Sept.	37.18	45.87	46.50	47.25	52.50	55.00
Oct.	37.00	47.12	46.50	49.50	52.50	55.00
Nov.	37.75	47.50	46.50	49.50	52.50	55.00
Dec.	38.00	47.50	46.50	52.50	52.50	55.00
Average	34.49	43.65	46.67	47.56	52.50	53.75

	1953	1954	1955	1956	1957	1958
Jan.	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00	\$68.50
Feb.	55.00	56.50	56.50	59.00	63.00	66.50
Mar.	55.00	56.50	56.50	59.00	63.00	66.50
Apr.	55.00	56.50	56.50	60.50	66.00	66.50
May	55.00	56.50	56.50	60.50	65.00	66.50
June	55.00	56.50	56.50	60.50	65.00	66.50
July	56.50	56.50	57.37	60.50	66.50	66.50
Aug.	56.50	56.50	59.00	62.00	66.50	66.50
Sept.	56.50	56.50	59.00	63.00	66.50	66.50
Oct.	56.50	56.50	59.00	63.00	66.50	66.50
Nov.	56.50	56.50	59.00	63.00	66.50	66.50
Dec.	56.50	56.50	59.00	63.00	66.50	66.50
Average	55.75	56.50	57.69	61.08	65.42	66.50

FOUNDRY PIG IRON PRICES

Mahoning, Shenango Valley, Per Gross Ton	1946	1947	1948†	1950	1951	1952
Jan.	\$25.75	\$30.50	\$39.37	\$46.50	\$52.50	\$52.50
Feb.	25.75	30.50	39.50	46.50	52.50	52.50
Mar.	26.13	33.50	39.50	46.50	52.50	52.50
Apr.	26.50	33.50	39.50	46.50	52.50	52.50
May	26.50	33.50	39.50	46.50	52.50	52.50
June	26.50	33.50	39.50	46.50	52.50	52.50
July	28.50	34.70	42.50	46.50	52.50	53.00
Aug.	28.50	36.50	43.50	46.50	52.50	55.00
Sept.	28.50	36.50	43.50	47.50	52.50	55.00
Oct.	28.50	36.50	46.12	49.50	52.50	55.00
Nov.	28.50	36.50	46.50	49.50	52.50	55.00
Dec.	30.10	36.70	46.50	52.12	52.50	55.00
Average	27.84	34.36	42.12	47.55	52.50	53.75

	1953	1954	1955	1956	1957	1958
Jan.	\$55.00	\$56.50	\$56.50	\$59.00	\$63.00	\$68.50
Feb.	55.00	56.50	56.50	59.00	63.00	66.50
Mar.	55.00	56.50	56.50	59.00	63.00	66.50
Apr.	55.00	56.50	56.50	59.00	65.00	66.50*
May	55.00	56.50	56.50	60.50	65.00	66.50
June	55.00	56.50	56.50	60.50	65.00	66.50
July	56.50	56.50	58.37	60.50	66.50	66.50
Aug.	56.50	56.50	59.00	63.00	66.50	66.50
Sept.	56.50	56.50	59.00	63.00	66.50	66.50
Oct.	56.50	56.50	59.00	63.00	66.50	66.50
Nov.	56.50	56.50	59.00	63.00	66.50	66.50
Dec.	56.50	56.50	59.00	63.00	66.50	66.50
Average	55.75	56.50	57.89	61.17	65.42	66.50*

† Price unchanged at \$46.50 through 1949.

* Foundry pig iron not made in the Valley since April.

GRANITE CITY, ILL., PIG IRON

Foundry, Gross Ton, at Furnace	1947	1948	1949	1950	1951	1952
Jan.	\$30.50	\$39.25	\$48.40	\$48.40	\$54.40	\$54.40
Feb.	30.50	40.00	48.40	48.40	54.40	54.40
Mar.	32.00	40.00	48.40	48.40	54.40	54.40
Apr.	33.50	40.00	48.40	48.40	54.40	54.40
May	33.50	41.43	48.40	48.40	54.40	54.40
June	33.50	45.75	48.40	48.40	54.40	54.40
July	34.60	45.75	48.40	48.40	54.40	54.90
Aug.	36.63	47.34	48.40	48.40	54.40	56.90
Sept.	37.00	48.40	48.40	48.40	54.40	56.90
Oct.	37.00	48.40	48.40	51.40	54.40	56.90
Nov.	37.00	48.40	48.40	51.40	54.40	56.90
Dec.	37.00	48.40	48.40	53.65	54.40	56.90
Average	34.39	44.42	48.40	49.34	54.40	55.48

	1953	1954	1955	1956	1957	1958
Jan.	\$56.90	\$58.40	\$58.40	\$60.90	\$64.90	\$68.40
Feb.	56.90	58.40	58.40	60.90	64.90	68.40
Mar.	56.90	58.40	58.40	60.90	66.90	68.40
Apr.	56.90	58.40	58.40	62.40	66.90	68.40
May	56.90	58.40	58.40	62.40	66.90	68.40
June	56.90	58.40	58.40	62.40	66.90	68.40
July	58.40	58.40	60.27	62.40	68.40	68.40
Aug.	58.40	58.40	60.90	64.90	68.40	68.40
Sept.	58.40	58.40	60.90	64.90	68.40	68.40
Oct.	58.40	58.40	60.90	64.90	68.40	68.40
Nov.	58.40	58.40	60.90	64.90	68.40	68.40
Dec.	58.40	58.40	60.90	64.90	68.40	68.40
Average	57.65	58.40	59.58	63.07	67.32	68.40

BIRMINGHAM PIG IRON PRICES

Foundry Grade, Per Gross Ton	1947	1948	1949	1950	1951	1952
Jan.	\$22.13	\$37.38	\$43.38	\$39.38	\$48.88	\$48.88
Feb.	26.88	37.38	43.38	42.38	48.88	48.88
Mar.	29.13	37.38	43.38	42.38	48.88	48.88
Apr.	29.88	37.38	43.38	42.38	48.88	48.88
May	29.88	38.38	39.71	42.38	48.88	48.88
June	29.88	38.38	38.38	42.38	48.88	48.88
July	31.28	31.04	39.38	42.38	48.88	48.38
Aug.	34.13	43.38	39.38	42.38	48.88	51.38
Sept.	34.88	43.38	39.38	42.87	48.88	51.38
Oct.	34.88	43.38	39.38	48.88	48.88	51.38
Nov.	34.88	43.38	39.38	48.88	48.88	51.38
Dec.	34.00	43.38	39.38	48.88	48.88	51.38
Average	31.43	40.43	40.74	43.53	48.88	49.96

	1953	1954	1955	1956	1957	1958
Jan.	\$51.38	\$52.88	\$52.88	\$55.00	\$59.00	\$62.50
Feb.	51.38	52.88	52.88	55.00	59.00	62.50
Mar.	51.38	52.88	52.88	55.00	59.00	62.50
Apr.	51.38	52.88	52.88	55.00	59.00	62.50
May	51.38	52.88	52.88	55.00	59.00	62.50
June	51.38	52.88	52.88	55.00	59.00	62.50
July	52.88	52.88	54.47	57.67	62.50	62.50
Aug.	52.88	52.88	55.00	58.85	62.50	62.50
Sept.	52.88	52.88	55.00	59.00	62.50	62.50
Oct.	52.88	52.88	55.00	59.00	62.50	62.50
Nov.	52.88	52.88	55.00	59.00	62.50	62.50
Dec.	52.88	52.88	55.00	59.00	62.50	62.50
Average	52.13	52.88	53.89	56.86	60.75	62.50

BASIC PIG IRON, VALLEY

Mahoning, Shenango Valley, Gross Ton	1946	1947	1948†	1950	1951	1952
Jan.	\$25.25	\$30.00	\$38.87	\$46.00	\$52.00	\$52.00
Feb.	25.25	30.00	39.00	46.00	52.00	52.00
Mar.	25.63	33.00	39.00	46.00	52.00	52.00
Apr.	26.00	33.00	39.00	46.00	52.00	52.00
May	26.00	33.00	39.00	46.00	52.00	52.00
June	26.00	33.00	39.00	46.00	52.00	52.00
July	28.00	34.20	42.00	46.00	52.00	52.50
Aug.	28.00	36.00	43.00	46.00	52.00	54.50
Sept.	28.00	36.00	43.00	46.75	52.00	54.50
Oct.	28.00	36.00	45.82	49.00	52.00	54.50
Nov.	28.00	36.00	46.50	49.00	52.00	54.50
Dec.	29.60	36.20	46.60	51.62	52.00	54.50
Average	27.14	34.78	41.62	47.03	52.00	53.98

	1953	1954	1955	1956	1957	1958
Jan.	\$54.50	\$56.00	\$56.00	\$58.50	\$62.50	\$66.00
Feb.	54.50	56.00	56.00	58.50	62.50	66.00
Mar.	54.50	56.00	56.00	58.50	64.50	66.00
Apr.	54.50	56.00	56.00	60.00	64.50	66.00
May	54.50	56.00	56.00	60.00	64.50	66.00
June	54.50	56.00	56.00	60.00	64.50	66.00
July	56.00	56.00	57.87	60.00	66.00	66.00
Aug.	56.00	56.00	59.50	62.50	66.00	66.00
Sept.	56.00	56.00	58.50	62.50	66.00	66.00
Oct.	56.00	56.00	58.50	62.50	66.00	66.00
Nov.	56.00	56.00	58.50	62.50	66.00	66.00
Dec.	56.00	56.00	58.50	62.50	66.00	66.00
Average	55.26	56.00	57.19	62.87	64.92	66.00

IRON ORE

LAKE SUPERIOR IRON ORE

Avg. Analyses, Combined Ranges, Grades

Year	Analyses, Pct				
	Iron, Natural	Phos.	Silica	Mang.	Moisture
1957	52.14	0.089	9.39	0.65	9.83
1956	51.34	0.090	9.78	0.67	10.39
1955	50.63	0.099	10.11	0.72	10.61
1954	50.86	0.095	10.22	0.70	10.47
1953	50.37	0.090	10.25	0.75	10.90
1952	50.49	0.111	10.05	0.77	10.78
1951	50.25	0.090	9.87	0.77	11.22
1950	50.38	0.092	9.65	0.77	11.11
1949	50.39	0.096	9.72	0.78	11.12
1948	50.49	0.093	9.30	0.76	11.35
1947	50.91	0.093	9.09	0.75	11.28
1946	51.32	0.087	8.83	0.74	11.22
1945	51.69	0.089	8.52	0.72	10.96
1944	51.72	0.088	8.42	0.74	11.02
1943	51.58	0.091	8.32	0.82	11.06
1942	51.65	0.089	8.21	0.79	10.98
1941	51.83	0.085	8.18	0.78	11.01

Source: American Iron Ore Assn.

LAKE SHIPMENTS OF IRON ORE

Lake Superior Shipments, Gross Tons

1940	63,308,000
1941	79,941,000
1942	92,070,000
1943	85,116,000
1944	81,039,000
1945	75,207,000
1946	88,975,000
1947	77,210,278
1948	82,655,757
1949	89,586,289
1950	78,205,592
1951	89,092,012
1952	74,810,798
1953	95,844,449
1954	60,793,697
1955	87,489,853
1956	73,389,972
1957	64,814,734
1958*	54,500,000

* Estimate.

Source: American Iron Ore Assn.

Prices: Lake Superior ore, foundry and furnace coke . . . Iron ore analyses, ore shipments and prices for various grades.

U. S. IRON ORE CONSUMPTION

In Long Tons

1948	100,498,557
1949	91,123,220
1950	108,610,273
1951	114,837,112
1952	100,940,636
1953	122,124,661
1954	96,800,000
1955	114,989,933
1956	119,669,641
1957	124,941,763
1958*	90,000,000

* Estimate by The Iron Age.

Source: U. S. Bureau of Mines.

CONNELLVILLE FOUNDRY COKE

Net Ton at Oven, Monthly Review

	1947	1948	1949	1950	1951	1952
Jan.	\$8.50	\$14.00	\$16.94	\$15.75	\$17.25	\$17.75
Feb.	9.35	14.00	16.75	15.75	17.25	17.75
Mar.	10.28	14.00	16.50	16.25	17.50	17.75
Apr.	10.65	14.00	16.50	15.25	17.75	17.75
May	11.25	14.00	16.38	16.25	17.75	17.75
June	11.25	16.00	16.25	16.25	17.75	17.75

	1947	1948	1949	1950	1951	1952
July	12.75	16.50	16.13	16.25	17.75	17.75
Aug.	13.75	17.00	15.75	16.25	17.75	17.75
Sept.	13.75	17.00	15.75	16.25	17.75	17.75
Oct.	13.94	17.00	15.75	16.75	17.75	17.75
Nov.	14.00	17.00	15.75	16.75	17.75	17.75
Dec.	14.00	17.00	15.75	17.12	17.75	17.75

	1947	1948	1949	1950	1951	1952
Average	11.96	15.62	16.18	16.32	17.65	17.75

	1953	1954	1955	1956	1957	1958
Jan.	\$17.75	\$16.75	\$16.75	\$16.25	\$18.25	\$18.25
Feb.	17.75	16.75	16.75	16.25	18.25	18.25
Mar.	17.63	16.75	16.75	16.25	18.25	18.25
Apr.	17.25	16.75	16.75	17.50	18.25	18.25
May	17.25	16.75	16.35	17.50	18.25	18.25
June	17.25	16.75	16.25	17.50	18.25	18.25

	1947	1948	1949	1950	1951	1952
July	17.25	16.75	16.25	17.50	18.25	18.25
Aug.	17.25	16.75	16.25	17.50	18.25	18.25
Sept.	16.95	16.75	16.25	17.50	18.25	18.25
Oct.	16.75	16.75	16.25	17.50	18.25	18.25
Nov.	16.75	16.75	16.25	18.25	18.25	18.25
Dec.	16.75	16.75	16.25	18.25	18.25	18.25

	1947	1948	1949	1950	1951	1952
Average	17.22	16.75	16.42	17.31	18.25	18.25

LAKE SUPERIOR IRON ORE PRICES

Per Gross Ton at Lower Lake Ports

BESSEMER ORES

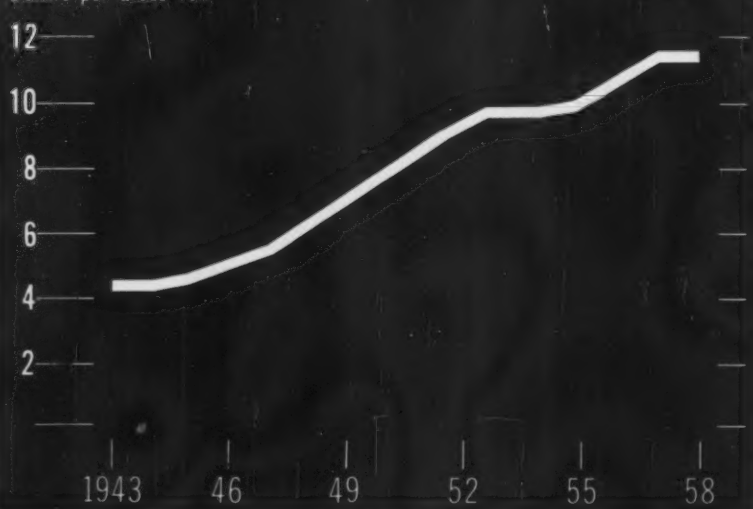
	Guarantee		Price	
	Iron Natural	Phosphorus Dry	Old Range	Mesabi
1941 through 1944	51.50	0.045	4.75	4.60
1945 to June 24, 1946	51.50	0.045	4.95	4.70
1946-June 24 to Dec. 31	51.50	0.045	5.45	5.20
1947 to Apr. 1, 1948	51.50	0.045	5.95	5.70
1948-Apr. 1 on	51.50	0.045	6.80	6.35
1949	51.50	0.045	7.60	7.35
1950-Feb. 1 to Dec. 1	51.50	0.045	8.10	7.85
1950-Dec. 1 on	51.50	0.045	8.70	8.45
1951	51.50	0.045	8.70	8.45
1952 to July 25	51.50	0.045	8.70	8.45
1952-July 26 on	51.50	0.045	9.45	9.20
1953 to June 30	51.50	0.045	10.10	9.85
1953-July 1 on	51.50	0.045	10.30	10.05
1954	51.50	0.045	10.30	10.05
1955	51.50	0.045	10.40	10.25
1956	51.50	0.045	11.25	11.00
1957	51.50	0.045	11.85	11.60
1958	51.50	0.045	11.85	11.60

NON-BESSEMER

	Guarantee		Price	
	Iron Natural	Old Range	Mesabi	High Phosphorus
1941 through 1944	51.50	4.60	4.45	4.35
1945 to June 24, 1946	51.50	4.80	4.55	4.55
1946-June 24 to Dec. 31	51.50	5.30	5.05	5.05
1947 to Apr. 1, 1948	51.50	5.80	5.55	5.55
1948-Apr. 1 on	51.50	6.45	6.20	6.20
1949	51.50	7.45	7.20	7.20
1950-Feb. 1 to Dec. 1	51.50	7.95	7.70	7.70
1950-Dec. 1 on	51.50	8.55	8.30	8.30
1951	51.50	8.55	8.30	8.30
1952 to July 25	51.50	8.55	8.30	8.30
1952-July 26 on	51.50	9.30	9.05	9.05
1953 to June 30	51.50	9.95	9.70	9.70
1953-July 1 on	51.50	10.15	9.90	9.90
1954	51.50	10.15	9.90	9.90
1955	51.50	10.25	10.10	10.00
1956	51.50	11.10	10.85	10.85
1957	51.50	11.70	11.45	11.45
1958	51.50	11.70	11.45	11.45

IRON ORE

Dollars per Gross Ton



CONNELLVILLE FURNACE COKE

Net Ton at Oven, Monthly Review

	1947	1948	1949	1950	1951	1952
Jan.	\$8.75	\$12.50	\$16.58	\$14.00	\$14.25	\$14.75
Feb.	8.88	12.50	15.25	14.00	14.25	14.75
Mar.	9.00	12.50	14.50	14.13	14.50	14.75
Apr.	9.60	12.50	14.50	14.25	14.75	14.75
May	10.50	12.50	14.38	14.25	14.75	14.75
June	10.50	12.70	14.25	14.25	14.75	14.75

	1947	1948	1949	1950	1951	1952
July	11.40	13.68	14.25	14.25	14.75	14.75
Aug.	12.00	14.75	14.25	14.25	14.75	14.75
Sept.	12.00	15.00	14.25	14.25	14.75	14.75
Oct.	12.38	15.00	14.25	14.25	14.75	14.75
Nov.	12.80	15.00	14.20	14.25	14.75	14.75
Dec.	12.50	15.00	14.00	14.25	14.75	14.75

	1947	1948	1949	1950	1951	1952
Average	10.83	13.93	14.58	14.20	14.65	14.75

	1953	1954	1955	1956	1957	1958
Jan.	\$14.75	\$14.38	\$14.38	\$14.25	\$15.38	\$15.38
Feb.	14.75	14.38	14.38	14.25	15.38	15.38
Mar.	14.75	14.38	14.38	14.25	15.38	15.38
Apr.	14.75	14.38	14.38	14.50	15.38	15.38
May	14.75	14.38	14.38	14.50	15.38	15.38
June	14.75	14.38	14.38	14.50	15.38	15.38

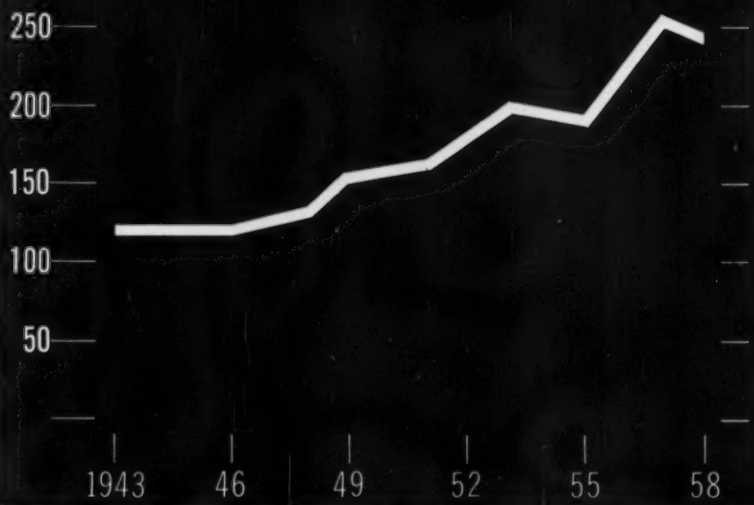
	1953	1954	1955	1956	1957	1958
July	14.75	14.38	14.38	14.50	15.38	15.38
Aug.	14.75	14.38	14.38	14.50	15.38	15.38
Sept.	14.53	14.38	14.38	14.50	15.38	15.38
Oct.	14.38	14.38	14.38	14.50	15.38	15.38
Nov.	14.38	14.38	14.38	14.50	15.38	15.38
Dec.	14.38	14.38	14.38	14.50	15.38	15.38

	1947	1948	1949	1950	1951	1952
Average	14.64	14.38	13.68	14.62	15.38	15.01

FERROMANGANESE PRICES

Dollars per Gross Ton

Eastern Furnaces



FERROMANGANESE

Eastern Producers, Carloads, Cents Per Lb

	1940*	1942**	1947**	1948†	1949	1950	1951	1952	1953‡	1954‡	1955	1956	1957	1958
Jan.	4.46	5.36	6.03	6.47	7.21	7.74	8.27	8.31	10.10	10.00	9.50	10.25	12.75	12.25
Feb.	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.10	10.00	9.50	10.25	12.75	12.25
Mar.	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.10	10.00	9.50	10.25	12.75	12.25
Apr.	4.46	5.36	6.03	6.47	7.21	7.74	8.31	8.31	10.10	10.00	9.50	10.65	12.75	12.25
May	4.46	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.12	10.00	9.50	10.75	12.35	12.25
June	4.91	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.00	10.00	9.50	10.75	12.75	12.25
July	5.36	6.03	6.03	6.47	7.74	7.74	8.31	8.31	10.00	10.00	9.50	10.75	12.75	12.25
Aug.	5.36	6.03	6.03	6.47	7.74	7.74	8.31	9.65	10.00	10.00	9.50	10.75	12.75	12.25
Sept.	5.36	6.03	6.03	6.47	7.74	7.74	8.31	10.00	10.00	9.50	9.50	11.25	12.50	12.25
Oct.	5.36	6.03	6.47	7.23	7.74	7.74	8.31	10.00	10.00	9.50	9.50	11.75	12.25	12.25
Nov.	5.36	6.03	6.47	7.23	7.74	7.97	8.31	10.00	10.00	9.50	9.50	11.75	12.25	12.25
Dec.	5.36	6.03	6.47	7.23	7.74	8.09	8.31	10.00	10.00	9.50	10.25	12.00	12.25	12.25
Average	4.95	5.80	6.14	6.96	7.84	7.79	8.31	9.02	10.04	9.83	10.91	10.94	12.90	12.25

† Seaboard price prior to Oct. 7, 1948. ‡ Starting June, 1953, prices reflect new standard of 74 to 78 pct Mn. Prices prior to that converted from older gross ton pricing method and were based on standard of 78-82 pct Mn. * Price unchanged at 5.36¢ through 1941. ** Price unchanged at 6.03¢ from 1943 through 1946.

50 PCT FERROSILICON

Cents per lb contained Si, Carloads, Delivered*

	1953	1954	1955	1956	1957	1958
Jan.	12.40	12.40	12.00	12.75	13.90	14.20
Feb.	12.40	12.40	12.00	12.75	13.90	14.20
Mar.	12.40	12.40	12.00	12.75	13.90	14.20
Apr.	12.40	10.80	11.00	12.75	13.00	14.20
May	12.40	10.80	11.00	12.75	13.00	14.20
June	12.40	10.80	11.00	12.75	13.00	14.20
July	12.40	10.80	11.00	12.75	13.00	14.20
Aug.	12.40	10.80	11.00	12.75	13.00	14.20
Sept.	12.40	11.52	11.00	13.15	13.00	14.20
Oct.	12.40	12.00	11.75	13.50	13.00	14.60
Nov.	12.40	12.00	11.75	13.50	13.00	14.60
Dec.	12.40	12.00	11.75	13.90	13.00	14.60
Average	12.40	11.56	11.43	12.00	13.15	14.30

* F.o.b. shipping point after Oct. 1, 1955.

CHEM. BONDED CHROME BRICK

F.o.b. Baltimore, Dollars per Net Ton

	1952	1953	1954	1955	1956	1957	1958
Jan.	\$62.00	\$68.00	\$66.00	\$68.00	\$91.00	\$98.00	\$105.00
Feb.	62.00	68.00	66.00	68.00	91.00	98.00	105.00
Mar.	62.00	68.00	66.00	68.00	91.00	98.00	105.00
Apr.	62.00	68.00	66.00	68.00	91.00	105.00	105.00
May	66.00	68.00	66.00	68.00	91.00	105.00	105.00
June	66.00	68.00	66.00	68.00	91.00	105.00	105.00
July	62.00	68.00	66.00	68.00	91.00	105.00	105.00
Aug.	62.00	68.00	66.00	68.00	91.00	105.00	105.00
Sept.	62.00	68.00	66.00	68.00	91.00	105.00	105.00
Oct.	66.00	68.00	66.00	68.00	91.00	105.00	109.00
Nov.	66.00	68.00	66.00	68.00	91.00	105.00	109.00
Dec.	66.00	68.00	66.00	68.00	91.00	105.00	109.00
Average	63.00	68.00	66.00	68.00	93.92	103.25	106.00

BONDED MAGNESITE BRICK

F.o.b. Baltimore, Dollars per Net Ton

	1952	1953	1954	1955	1956	1957	1958
Jan.	\$93.00	\$97.50	\$97.50	\$97.50	\$102.00	\$109.00	\$116.00
Feb.	93.00	97.50	97.50	97.50	102.00	109.00	116.00
Mar.	93.00	97.50	97.50	97.50	102.00	109.00	116.00
Apr.	93.00	97.50	97.50	97.50	102.00	116.00	116.00
May	93.00	97.50	97.50	97.50	102.00	116.00	116.00
June	93.00	97.50	97.50	97.50	102.00	116.00	116.00
July	93.00	97.50	97.50	97.50	102.00	116.00	116.00
Aug.	93.00	97.50	97.50	97.50	109.00	116.00	116.00
Sept.	93.00	97.50	97.50	97.50	109.00	116.00	116.00
Oct.	97.50	97.50	97.50	97.50	109.00	116.00	119.00
Nov.	97.50	97.50	97.50	102.00	109.00	116.00	119.00
Dec.	97.50	97.50	97.50	102.00	109.00	116.00	119.00
Avg.	94.13	97.50	97.50	98.59	104.92	114.25	116.75

SILICA BRICK STANDARD GRADE

Mt. Union Pa., Ensley, Ala., Carloads per 1000 Brick, F.o.b. plant

	1953	1954	1955	1956	1957	1958
Jan.	\$99.30	\$115.00	\$120.00	\$128.00	\$140.00	\$150.00
Feb.	99.30	115.00	120.00	128.00	140.00	150.00
Mar.	99.30	115.00	120.00	128.00	140.00	150.00
Apr.	99.30	115.00	120.00	128.00	150.00	150.00
May	99.30	115.00	120.00	128.00	150.00	150.00
June	99.30	115.00	120.00	128.00	150.00	150.00
July	99.30	115.00	124.00	128.00	150.00	150.00
Aug.	99.30	115.00	128.00	140.00	150.00	150.00
Sept.	105.72	119.00	128.00	140.00	150.00	150.00
Oct.	115.00	120.00	128.00	140.00	150.00	150.00
Nov.	115.00	120.00	128.00	140.00	150.00	150.00
Dec.	115.00	120.00	128.00	140.00	150.00	150.00
Average	103.01	116.58	123.66	133.00	147.50	152.00

Ferroalloys, Furnace Bricks



SPIEGELEISEN, 19 TO 21 PCT.

Palmerton, Pa., Carloads, Gross Ton

	1953	1954	1955	1956	1957	1958
Jan.	\$85.00	\$86.00	\$86.00	\$91.50	\$102.50	\$102.50
Feb.	85.00	86.00	86.00	91.50	102.50	102.50
Mar.	85.00	86.00	86.00	91.50	102.50	102.50
Apr.	85.00	86.00	86.00	94.00	102.50	102.50
May	85.00	86.00	86.00	94.00	102.50	102.50
June	86.00	86.00	86.00	94.00	102.50	102.50
July	86.00	86.00	86.00	94.00	102.50	102.50
Aug.	86.00	86.00	86.00	96.00	102.50	102.50
Sept.	86.00	86.00	86.00	96.00	102.50	102.50
Oct.	86.00	86.00	87.50	99.50	102.50	102.50
Nov.	86.00	86.00	88.00	99.50	102.50	102.50
Dec.	86.00	86.00	88.00	99.50	102.50	102.50
Average	85.58	86.00	86.45	95.03	102.50	102.50

BURNED MAGNESITE BRICK

F.o.b. Baltimore, Dollars per Net Ton

	1952	1953	1954	1955	1956	1957	1958
Jan.	\$104.00	\$109.00	\$109.00	\$109.00	\$114.00	\$121.00	\$131.00
Feb.	104.00	109.00	109.00	109.00	114.00	121.00	131.00
Mar.	104.00	109.00	109.00	109.00	114.00	121.00	131.00
Apr.	104.00	109.00	109.00	109.00	114.00	131.00	131.00
May	104.00	109.00	109.00	109.00	114.00	131.00	131.00
June	104.00	109.00	109.00	109.00	114.00	131.00	131.00
July	104.00	109.00	109.00	109.00	114.00	131.00	131.00
Aug.	104.00	109.00	109.00	109.00	121.00	131.00	131.00
Sept.	104.00	109.00	109.00	109.00	121.00	131.00	131.00
Oct.	109.00	109.00	109.00	109.00	121.00	131.00	140.00
Nov.	109.00	109.00	109.00	114.00	121.00	131.00	140.00
Dec.	109.00	109.00	109.00	114.00	121.00	131.00	140.00
Avg.	105.25	109.00	109.00	109.83	116.92	129.50	133.25

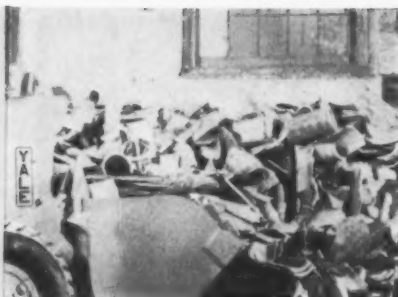
FIRST QUAL FIRE CLAY BRICK

Pa., Ky., Mo., Ill., Md., Ohio, F.o.b. Plant**

	1952	1953	1954	1955	1956	1957	1958
Jan.	\$94.60	\$99.30	\$109.00	\$114.00	\$122.00	\$128.00	\$135.00
Feb.	94.60	99.30	109.00	114.00	122.00	128.00	135.00
Mar.	94.60	99.30	109.00	114.00	122.00	128.00	135.00
Apr.	94.60	99.30	109.00	114.00	122.00	135.00	135.00
May	94.60	99.30	109.00	114.00	122.00	135.00	135.00
June	94.60	99.30	109.00	114.00	122.00	135.00	135.00
July	94.60	99.30	109.00	118.00	122.00	135.00	135.00
Aug.	94.60	99.30	109.00	122.00	128.00	135.00	135.00
Sept.	94.60	105.12	113.00	122.00	128.00	135.00	135.00
Oct.	99.30	109.00	114.00	122.00	128.00	135.00	140.00
Nov.	99.30	109.00	114.00	122.00	128.00	135.00	140.00
Dec.	99.30	109.00	114.00	122.00	128.00	135.00	140.00
Avg.	98.78	102.21	110.95	117.66	124.90	133.25	136.25

* Add \$5.00 for Salina, Pa., after May, 1949.
** Carloads per 1000 brick.

Steel Scrap



Average of Iron Age Scrap Prices Pittsburgh, Chicago, Philadelphia Per Gross Ton

No. 1 Heavy Melting

	1953	1954	1955	1956	1957	1958
Jan.	\$42.00	\$26.67	\$34.62	\$32.33	\$59.37	\$33.88
Feb.	42.92	25.92	36.16	48.75	53.17	37.17
Mar.	44.18	23.83	37.27	49.43	48.50	36.58
Apr.	41.75	25.38	36.50	54.88	42.80	32.73
May	38.59	27.79	34.48	51.17	46.17	33.50
June	40.97	27.88	34.96	43.08	54.23	35.40
July	44.60	26.87	39.50	46.42	54.00	38.25
Aug.	43.46	28.33	43.96	56.10	52.96	42.08
Sept.	36.53	29.71	44.25	58.58	47.29	43.10
Oct.	32.67	32.63	44.75	56.80	37.37	42.66
Nov.	35.21	33.40	45.47	61.67	32.83	41.70
Dec.	31.33	32.46	56.42	64.59	32.33	39.82*
Average	39.52	28.59	40.19	53.62	48.75	38.08*

No. 2 Bundles

	1953	1954	1955	1956	1957	1958
Jan.	\$41.83	\$23.25	\$26.33	\$43.29	\$47.43	\$26.83
Feb.	41.25	20.67	27.46	40.13	44.04	28.75
Mar.	40.88	18.38	28.83	40.03	39.58	27.50
Apr.	37.13	19.73	27.17	43.88	34.75	24.03
May	31.72	22.25	25.67	39.73	38.07	24.67
June	33.04	21.63	26.07	35.06	45.84	26.17
July	36.83	20.84	30.46	36.42	44.88	27.58
Aug.	35.89	21.25	35.17	44.40	43.17	29.87
Sept.	31.19	22.42	35.77	46.50	37.13	29.10
Oct.	26.07	25.79	36.13	44.88	27.80	28.75
Nov.	29.50	26.27	35.73	48.33	24.66	29.33
Dec.	25.83	25.07	41.32	51.63	24.20	26.82*
Average	34.25	22.27	31.34	42.86	37.63	27.50*

* Estimate.

PITTSBURGH

Prices of No. 1 Scrap, Per Gross Ton

	1953	1954	1955	1956	1957	1958
Jan.	\$43.00†	\$30.25	\$36.50	\$52.50	\$60.70	\$32.75
Feb.	43.75	27.25	37.50	49.00	53.50	36.50
Mar.	44.75	24.90	38.50	49.90	48.75	36.50
Apr.	42.63	26.50	37.00	56.00	42.00	33.10
May	39.00	30.25	34.70	49.70	46.25	34.75
June	42.10	29.50	35.25	44.50	55.50	37.50
July	46.75	26.50	40.00	46.50	56.25	40.75
Aug.	44.75	29.50	45.00	57.00	55.00	44.50
Sept.	39.30	31.00	44.50	58.38	49.00	44.50
Oct.	35.50	34.00	44.50	56.70	37.90	45.00
Nov.	37.25	34.20	45.80	63.25	33.00	44.75
Dec.	33.10	33.00	51.13	66.25	32.50	42.50*
Average	40.99	29.90	40.87	54.14	47.53	39.42*

No. 2 Bundles

	1953	1954	1955	1956	1957	1958
Jan.	\$43.00†	\$25.25	\$28.50	\$44.25	\$48.50	\$28.75
Feb.	42.75†	22.25	29.38	41.00	44.75	30.50
Mar.	41.50	20.00	31.20	42.70	39.00	29.00
Apr.	37.90	22.30	28.50	48.00	34.25	25.10
May	32.40	25.00	28.75	40.10	39.90	26.25
June	35.00	25.00	27.10	36.50	47.25	27.50
July	40.50	23.50	32.50	38.00	46.75	30.00
Aug.	39.00	23.50	37.50	45.50	45.70	33.00
Sept.	34.00	24.50	36.90	47.50	40.00	31.30
Oct.	28.40	27.50	37.50	49.75	31.30	31.50
Nov.	31.75	27.50	35.75	49.90	29.00	33.25
Dec.	26.90	25.90	41.50	52.50	26.50	31.50*
Average	38.09	24.43	32.76	44.23	39.57	29.80*

† OPS basing point price ceiling.

SCRAP FORECAST: During first half of 1959 the scrap market will show measurable improvement over 1958 levels. That's the prediction of Edwin C. Barringer, executive vice president of the Institute of Scrap Iron & Steel. First quarter business will be above the '58 average, he adds. More gains will come in second quarter.

CHICAGO

Prices of No. 1 Scrap, Per Gross Ton

	1953	1954	1955	1956	1957	1958
Jan.	\$41.50†	\$28.13	\$34.50	\$50.10	\$57.90	\$31.75
Feb.	42.50	25.50	34.00	46.63	49.00	37.00
Mar.	43.50	24.50	34.90	48.00	44.00	35.25
Apr.	39.88	28.13	35.50	54.00	39.50	28.70
May	36.25	30.38	32.90	50.50	42.00	31.75
June	39.30	31.40	33.25	44.00	51.10	35.10
July	43.38	28.88	38.00	44.50	51.75	39.25
Aug.	42.25	29.50	40.90	55.50	52.63	44.00
Sept.	34.40	30.00	41.75	59.00	46.50	44.90
Oct.	31.00	33.75	43.25	56.90	36.50	42.50
Nov.	33.88	33.30	43.70	62.50	31.75	42.75
Dec.	31.00	33.00	49.13	65.00	30.50	38.03*
Average	38.24	29.71	36.48	53.05	44.43	43.50*

No. 2 Bundles

	1953	1954	1955	1956	1957	1958
Jan.	\$41.50†	\$21.75	\$24.50	\$40.13	\$44.40	\$22.25
Feb.	41.00	19.75	24.50	37.75	39.75	28.25
Mar.	39.91	17.86	24.50	37.30	37.50	26.00
Apr.	37.00	19.40	24.50	41.50	34.00	21.70
May	32.13	22.25	23.13	36.80	34.30	24.25
June	33.13	21.88	23.60	32.75	42.13	27.50
July	36.00	20.38	27.13	34.00	41.50	29.25
Aug.	34.00	21.75	31.50	43.10	40.80	32.00
Sept.	27.75	21.75	31.90	44.75	33.88	31.50
Oct.	23.70	24.38	33.38	42.25	23.70	29.50
Nov.	27.25	23.56	34.19	46.00	20.25	31.50
Dec.	24.10	23.50	39.95	50.25	19.50	31.50*
Average	33.12	21.52	26.56	40.55	34.35	27.93*

† OPS basing point price ceiling.
* Estimate.

PHILADELPHIA

Prices of No. 1 Scrap, Per Gross Ton

	1953	1954	1955	1956	1957	1958
Jan.	\$41.50†	\$27.63	\$32.87	\$54.10	\$59.50	\$37.13
Feb.	42.50	25.00	37.00	50.63	57.00	38.00
Mar.	44.30	22.10	38.40	50.40	52.75	38.00
Apr.	42.75	21.50	37.00	54.63	48.88	36.40
May	40.50	22.75	35.60	53.30	50.25	34.00
June	41.50	22.75	38.50	46.75	56.10	33.60
July	43.69	23.25	40.50	48.25	54.00	34.75
Aug.	43.38	26.00	45.50	55.80	51.25	37.75
Sept.	35.90	28.13	45.70	58.38	46.38	39.90
Oct.	31.50	30.75	48.50	56.80	37.70	40.50
Nov.	34.50	32.70	47.10	59.25	33.75	37.62
Dec.	29.90	31.38	51.00	62.50	34.00	33.75*
Average	39.33	26.16	41.31	54.23	48.30	38.78*

No. 2 Bundles

	1953	1954	1955	1956	1957	1958
Jan.	\$41.00†	\$22.75	\$26.00	\$45.50	\$49.40	\$26.50
Feb.	40.00†	20.00	28.50	41.63	47.63	27.50
Mar.	40.63	17.25	30.80	40.10	42.25	27.50
Apr.	36.50	17.50	28.50	44.13	36.00	25.30
May	30.63	18.50	27.13	42.30	39.50	23.50
June	31.00	18.00	27.50	36.00	46.13	23.50
July	34.00	17.75	31.75	37.25	46.38	23.50
Aug.	34.69	18.50	36.50	44.50	43.00	24.00
Sept.	31.81	21.00	38.50	47.25	37.50	24.50
Oct.	28.10	25.50	37.50	45.63	28.50	25.25
Nov.	29.50	27.75	37.25	49.10	24.75	23.25
Dec.	26.50	25.80	42.50	52.13	24.60	22.87*
Average	33.53	21.11	32.70	43.79	38.97	24.78*

† OPS basing point price ceiling.
* Estimate.



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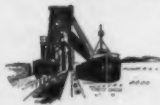
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1959 Conventions And Meetings

Trade association and technical society meetings and conventions are key sources of metalworking ideas and information. Here's a list of major ones to come.

JANUARY

ALUMINUM WINDOW MFRS. ASSN.—Winter meeting Jan. 7-8, Key Biscayne Hotel, Miami, Fla. Association headquarters are at 75 West St., New York.

THE AMERICAN BOILER MFRS. ASSN.—Mid-winter meeting, Jan. 22, Statler Hotel, Cleveland, O. Association headquarters are at 4062 Mayfield Rd., Cleveland.

ASSN. OF ROLLER & SILENT CHAIN MFRS.—Annual convention, Jan. 28-29, The Drake Hotel, Chicago, Ill. Association headquarters are at 3343 Central Ave., Indianapolis.

INDUSTRIAL HEATING EQUIPMENT ASSN., INC.—Annual winter meeting, Jan. 19-20, Cleveland, O. Association headquarters are at 1145-19th St., N. W., Washington.

INSTITUTE OF SCRAP IRON & STEEL INC.—Annual convention, Jan. 11-14, The Waldorf Astoria, New York. Institute headquarters are at 1729 "H" St., N. W., Washington.

MALLEABLE FOUNDERS' SOCIETY—Semi-annual meeting, Jan. 15, Hotel Cleveland, Cleveland. Society headquarters are at 1800 Union Commerce Bldg., Cleveland.

METAL LATH MFRS. ASSN.—Meeting, Jan. 28-29, Hotel Cleveland, Cleveland. Association headquarters are at Engineers Bldg., Cleveland.

POWDER METALLURGY PARTS MFRS. ASSN.—Membership meeting, Jan. 27, Greater Pittsburgh Airport Hotel, Pittsburgh, Pa. Association headquarters are at 1 Gateway Center, Pittsburgh.

POWDER METALLURGY PARTS MFRS. ASSN.—Board of directors' meeting, Jan. 26, Greater Pittsburgh Airport Hotel, Pittsburgh, Pa. Association headquarters are at 1 Gateway Center, Pittsburgh.

SOCIETY OF PLASTICS ENGINEERS, INC.—15th Annual technical conference, Worldwide Advances in Plastics, Jan. 27-30, The Commodore Hotel, New York. Society headquarters are at 34 E. Putnam Ave., Greenwich, Conn.

STEEL PLATE FABRICATORS ASSN.—Annual meeting, Jan. 28-29-30, Roosevelt Hotel, New Orleans. Association headquarters are at 105 W. Madison St., Chicago.

STEEL SHIPPING CONTAINER INSTITUTE, INC.—Winter meeting, Jan. 20-21, St. Regis Hotel, New York. Institute headquarters are at 600-5th Ave., New York.

TRUCK TRAILER MFRS. ASSN.—18th Annual convention, Jan. 26-28, Hollywood Beach Hotel, Hollywood, Fla. Association headquarters are at 710 Albee Bldg., Washington.

FEBRUARY

AMERICAN COKE AND COAL CHEMICALS INSTITUTE—Western regional meeting, Feb. 5, Drake Hotel, Chicago. Institute headquarters are at 711-14th St., N. W., Washington.

AMERICAN SOCIETY FOR TESTING MATERIALS—Committee Week meeting, Feb. 2-6, Penn Sheraton Hotel, Pittsburgh, Pa. Society headquarters are at 1916 Race St., Phila.

CASTER AND FLOOR TRUCK MFRS. ASSN.—Meeting, Feb. 17-18-19, Hotel St. Moritz, New York. Association headquarters are at 27 E. Monroe St., Chicago.

HACK AND BAND SAWS MFRS. ASSN.—Meeting, Feb. 2, Biltmore Hotel, New York. Association headquarters are at 1015 Chestnut St., Phila.

THE METALLURGICAL SOCIETY OF AIME—Annual meeting, Feb. 15-19, St. Francis, Sheraton-Palace, and Sir Francis Drake Hotels, San Francisco, Calif. Society headquarters are at 29 West 39th St., New York.

MARCH

AMERICAN MACHINE TOOL DISTRIBUTORS' ASSN.—Spring Meeting, Mar. 17-18-19, The Sheraton-Park Hotel, Washington, D. C. Association headquarters are at 1900 Arch St., Phila.

AMERICAN SOCIETY FOR METALS—Western Metal Exposition and Congress meeting (biennial), Mar. 16-20, Pan Pacific Auditorium, Los Angeles, Calif. Society headquarters are at 7301 Euclid Ave., Cleveland.

ELECTRONIC INDUSTRIES ASSN.—Quarterly meeting, Mar. 18-19-20, Statler Hotel, Washington, D. C. Association headquarters are at 1721 DeSales St., N.W., Washington.

INTERNATIONAL ACETYLENE ASSN.—Annual convention, Mar. 9-10, Hotel Roosevelt, New Orleans, La. Association headquarters are at 30 East 42nd St., New York.

INVESTMENT CASTING INSTITUTE—Meeting, Mar. 17-18-19, The Surf Rider, Santa Monica, Calif. Institute headquarters are at 27 E. Monroe St., Chicago.

NATIONAL ASSN. OF CORROSION ENGINEERS—15th annual conference and exhibition, Mar. 16-20, Hotel Sherman, Chicago, Ill. Association headquarters are at 1061 M & M Bldg., Houston.

PRESSED METAL INSTITUTE—Annual spring technical meeting, Mar. 11-12-13, Pick-Congress Hotel, Chicago. Institute headquarters are at 3673 Lee Rd., Cleveland.

SOCIETY FOR NON-DESTRUCTIVE TESTING, INC.—Western regional convention, Mar. 16-20, Ambassador Hotel, Los Angeles, Calif. Society headquarters are at 1109 Hinman St., Evanston, Ill.

STEEL FOUNDERS' SOCIETY OF AMERICA—57th Annual meeting, Mar. 9-10, Drake Hotel, Chicago, Ill. Society headquarters are at 606 Terminal Tower, Cleveland.

APRIL

AMERICAN FOUNDRYMEN'S SOCIETY—Annual convention (Castings Congress and Engineered Castings Show), Apr. 13-17, Hotels Sherman and Morrison, Chicago. Society headquarters are at Golf and Wolf Rds., Des Plaines.

AMERICAN HOT DIP GALVANIZERS ASSN., INC.—Annual meeting, Apr. 7-8, Empress Hotel, Miami Beach, Fla. Association headquarters are at 1806 First National Bank Bldg., Pittsburgh.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC.—National engineering conference, Apr. 16-17, The Dinkler-Tutwiler Hotel, Birmingham, Ala. Institute headquarters are at 101 Park Ave., New York.

AMERICAN SOCIETY OF LUBRICATION ENGINEERS—Annual meeting and exhibit, Apr. 21-22-23, Hotel Statler, Buffalo, N. Y. Society headquarters are at 84 E. Randolph St., Chicago.

AMERICAN SOCIETY OF TOOL ENGINEERS—Annual meeting, Apr. 18-22, Schroeder Hotel, Milwaukee, Wis. Society headquarters are at 10700 Puritan Ave., Detroit.

AMERICAN WELDING SOCIETY—Annual meeting and welding exposition, Apr. 6-10, Hotel Sherman and the International Amphitheatre, Chicago, Ill. Society headquarters are at 33 W. 39th St., New York.

AMERICAN ZINC INSTITUTE, INC.—Annual meeting, Apr. 23-24, Drake Hotel, Chicago, Ill. Institute headquarters are at 60 E. 42nd St., New York.

ASSN. OF IRON AND STEEL ENGINEERS—Spring conference, Apr. 27-28-29, Hotel Statler, Buffalo, N. Y. Association headquarters are at 1010 Empire Bldg., Pittsburgh.

GAS APPLIANCE MFRS. ASSN.—Annual meeting, Apr. 1-3, Americana Hotel, Bal Harbour, Fla. Association headquarters are at 60 East 42nd St., New York.

LEAD INDUSTRIES ASSN.—31st Annual meeting, Apr. 22-24, The Drake Hotel, Chicago, Ill. Association headquarters are at 60 E. 42nd St., New York.

METAL LATH MFRS. ASSN.—Meeting, Apr. 22-23, Boca Raton Hotel, Boca Raton, Fla. Association headquarters are at Engineers Bldg., Cleveland.

METAL POWDER INDUSTRIES FEDERATION—Annual meeting, Apr. 20-22, Sheraton-Cadillac Hotel, Detroit. Headquarters are at 130 West 42nd St., New York.



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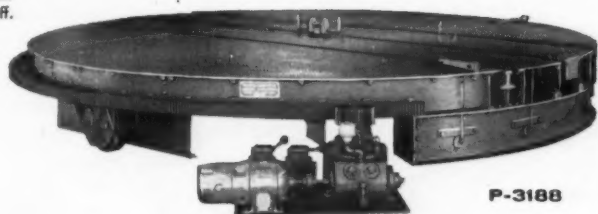
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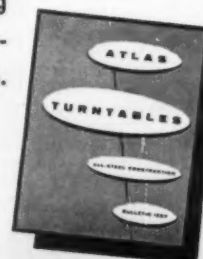
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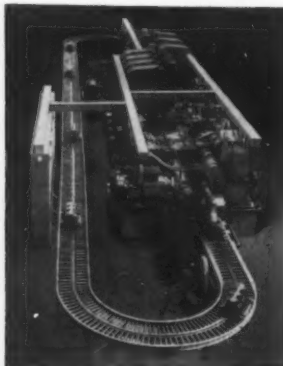
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MEETINGS

METAL TREATING INSTITUTE—Spring meeting, Apr. 23-24-25, Hollywood Beach Hotel, Hollywood, Fla. Institute headquarters are at 271 North Ave., New Rochelle, N. Y.

NATIONAL ASSN. OF ARCHITECTURAL METAL MFRS.—21st Annual convention, Apr. 12-17, Hotel Monteleone, New Orleans, La. Association headquarters are at 228 N. LaSalle St., Chicago.

NATIONAL MACHINE TOOL BUILDERS' ASSN.—Spring meeting, Apr. 30, May 1, Hotel Statler, Detroit, Mich. Association headquarters are at 2071 E. 102nd St., Cleveland.

NATIONAL SCREW MACHINE PRODUCTS ASSN.—Annual national meeting, Apr. 26-29, Roosevelt Hotel, New York. Association headquarters are at 2860 E. 130th St., Cleveland.

SCIENTIFIC APPARATUS MAKERS ASSN.—Annual meeting, Apr. 25-30, The Greenbrier Hotel, White Sulphur Springs, W. Va. Association headquarters are at 20 N. Wacker Drive, Chicago.

STEEL BOILER INSTITUTE, INC.—Annual meeting, Apr. 27-28, Sheraton-Park Hotel, Washington. Institute headquarters are at 1308 Land Title Bldg., Phila.

STEEL SHIPPING CONTAINER INSTITUTE, INC.—Annual meeting, Apr. 14-16, Kenilworth Hotel, Miami Beach, Fla. Institute headquarters are at 600 5th Ave., New York.

WIRE ASSN.—Regional meeting, Apr. 23-24, Statler Hotel, Boston, Mass. Association headquarters are at 453 Main St., Stamford, Conn.

MAY

AIR-CONDITIONING AND REFRIGERATION INSTITUTE—Annual meeting, May 3-6, The Homestead, Hot Springs, Va. Institute headquarters are at 1346 Connecticut Ave., N.W., Washington.

AIRCRAFT INDUSTRIES ASSN. OF AMERICA—Semi-annual meeting, May 20-22, Williamsburg Inn, Williamsburg, Va. Association headquarters are at 610 Shoreham Bldg., Washington.

AMERICAN COKE AND COAL CHEMICALS INSTITUTE—Eastern regional meeting, May 11-12, The Westchester Country Club, Rye, N. Y. Institute headquarters are at 711 14th St., N.W., Washington.

AMERICAN GEAR MFRS. ASSN.—43rd Annual meeting, May 31-June 3, The Homestead, Hot Springs, Va. Association headquarters are at 1 Thomas Circle, Washington.

AMERICAN IRON AND STEEL INSTITUTE—Annual meeting, May 27-28, The Waldorf-Astoria, New York. Institute headquarters are at 150 E. 42nd St., New York.

AMERICAN MINING CONGRESS—Coal convention and exposition (Coal Show), May 11-14, Public Auditorium, Cleveland, O. Congress headquarters are at 1200 18th St., N.W., Washington.

AMERICAN STEEL WAREHOUSE ASSN., INC.—Annual meeting, May 3-4-5-6, The Drake Hotel, Chicago, Ill. Association headquarters are at 540 Terminal Tower, Cleveland.

AMERICAN SUPPLY & MACHINERY MFRS. ASSN., INC.—Annual triple industrial supply convention, May 13-15, Dallas, Texas. Association headquarters are at 2130 Keith Bldg., Cleveland.

ANTI-FRICTION BEARING MFRS. ASSN., INC.—Semi-annual meeting, May 20-22, Edgewater Beach Hotel, Chicago, Ill. Association headquarters are at 60 E. 42nd St., New York.

CONCRETE REINFORCING STEEL INSTITUTE—Annual meeting, May 25-30, The Greenbrier Hotel, White Sulphur Springs, W. Va. Institute headquarters are at 38 South Dearborn St., Chicago.

THE ELECTROCHEMICAL SOCIETY, INC.—Spring meeting, May 3-4-5-6-7, Sheraton Hotel, Philadelphia. Society headquarters are at 1860 Broadway, New York.

ELECTRONIC INDUSTRIES ASSN.—Annual convention, May 20-21-22, Sheraton Hotel, Chicago, Ill. Association headquarters are at 1721 DeSales St., N.W., Washington.

INDUSTRIAL DIAMOND ASSN. OF AMERICA, INC.—Annual meeting and convention, May 11-14, Williamsburg Inn, Williamsburg, Va. Association headquarters are at P. O. Box 175, Pompton Plains, N. J.

INDUSTRIAL HEATING EQUIPMENT ASSN., INC.—Annual spring meeting, May 17-20, The Homestead, Hot Springs, Va. Association headquarters are at 1145 19th St., N.W., Washington.

INDUSTRIAL WIRE CLOTH INSTITUTE—Annual resort meeting, May 23-26, The Greenbrier Hotel, White Sulphur Springs, W. Va. Institute headquarters are at 75 West St., New York.

MALLEABLE FOUNDERS' SOCIETY—Annual meeting, May 25-26, The Homestead, Hot Springs, Va. Society headquarters are at 1800 Union Commerce Bldg., Cleveland.

THE MAGNESIUM ASSN.—Annual meeting, May 17-20, Sea Island, Georgia. Association headquarters are at 122 E. 42nd St., New York.

PLUMBING BRASS INSTITUTE—General membership meeting, May 26-27, Greater Pittsburgh Airport Hotel, Pittsburgh. Institute headquarters are at 759 One Gateway Center, Pittsburgh.

RAIL STEEL BAR ASSN.—Meeting, May 3-6, Grove Park Inn, Asheville, N. C. Association headquarters are at 38 S. Dearborn St., Chicago 3, Ill.

WIRE REINFORCEMENT INSTITUTE, INC.—Annual spring meeting, May 25-26, The Greenbrier Hotel, White Sulphur Springs, W. Va. Institute headquarters are at National Press Bldg., Washington.

JUNE

ALLOY CASTING INSTITUTE—Annual meeting, June 21-23, The Homestead, Hot Springs, Va. Institute headquarters are at 286 Old Country Road, Mineola, N. Y.



"I want to be absolutely fair about this, so let me hear your side of it before I blow my top."

THE IRON AGE, January 1, 1959

THE AMERICAN BOILER MFRS. ASSN.—Annual convention, June 14-17, The Homestead, Hot Springs, Va. Association headquarters are at 4062 Mayfield Road, Cleveland.

AMERICAN ELECTROPLATERS' SOCIETY, INC.—Golden Jubilee convention, International finishing exposition, Fifth international conference, June 15-19, Statler Hilton Hotel, Detroit. Society headquarters are at 445 Broad St., Newark.

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS—Semi-annual meeting, June 14-18, Chase-Park Plaza Hotel, St. Louis, Mo. Society headquarters are at 29 W. 39th St., New York.

AMERICAN SOCIETY FOR TESTING MATERIALS—Annual meeting, June 21-26, Chalfonte-Haddon Hall, Atlantic City, N. J. Society headquarters are at 1916 Race St., Philadelphia.

ASSN. OF IRON AND STEEL ENGINEERS—Western meeting, June 15-16-17, Hotel Utah, Salt Lake City, Utah. Association headquarters are at 1010 Empire Bldg., Pittsburgh.

INDUSTRIAL SAFETY EQUIPMENT ASSN., INC.—Annual meeting, June 23-26, Point Clear, Ala. Association headquarters are at 420 Lexington Ave., New York.

INSTITUTE OF APPLIANCE MFRS.—Annual meeting and exhibit, June 1-2-3, Netherland Hilton Hotel, Cincinnati, O. Institute headquarters are at Shoreham Hotel, Washington.

THE MATERIAL HANDLING INSTITUTE, INC.—Exposition, June 9-12, Cleveland Public Auditorium, Cleveland, O. Institute headquarters are at 759—One Gateway Center, Pittsburgh.

NATIONAL ASSN. OF PURCHASING AGENTS—Convention and Inform-A-Show, June 14-17, The Waldorf-Astoria, N. Y. Association headquarters are at 11 Park Place, New York.

PRESSED METAL INSTITUTE—National Sales Conference, June 11-12, Bedford Springs, Pa. Institute headquarters are at 3673 Lee Rd., Cleveland.

WIRE ASSN.—Regional meeting, June 4-5, Fairmont Hotel, San Francisco, Calif. Association headquarters are at 453 Main St., Stamford, Conn.

JULY

ASSN. OF ROLLER & SILENT CHAIN MFRS.—Summer meeting, July 22-23, Grand Hotel, Mackinac Island, Mich. Association headquarters are at 3343 Central Ave., Indianapolis.

METAL LATH MFRS. ASSN.—Meeting, July 21-22, Statler Hotel, Buffalo, N. Y. Association headquarters are at Engineers Bldg., Cleveland.

TRUCK TRAILER MFRS. ASSN.—11th Annual summer meeting, July 13-15, The Homestead, Hot Springs, Va. Association headquarters are at 710 Albee Bldg., Washington.

SEPTEMBER

AMERICAN DIE CASTING INSTITUTE—Annual meeting, Sept. 15-16-17-18, Edgewater Beach Hotel, Chicago. Institute headquarters are at 366 Madison Ave., New York.

AMERICAN MINING CONGRESS—Metal mining-industrial minerals convention, Sept. 14-17, Denver, Colo. Congress headquarters are at 1200 18th St., N.W., Washington.

AMERICAN WELDING SOCIETY—National fall meeting, Sept. 28-Oct. 1, Hotel Sheraton-Cadillac, Detroit. Society headquarters are at 33 W. 39th St., New York.

ASSN. OF IRON AND STEEL ENGINEERS—Convention, Sept. 28-29-30-Oct. 1, Sherman Hotel, Chicago. Association headquarters are at 1010 Empire Bldg., Pittsburgh.

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MEETINGS

ELECTRONIC INDUSTRIES ASSN.—Quarterly meeting, Sept. 22-23-24, Plaza Hotel, New York. Association headquarters are at 1721 DeSales St., N.W., Washington.

INSTRUMENT SOCIETY OF AMERICA—14th Annual ISA Instrument-Automation Conference & Exhibit, Sept. 21-25, International Amphitheater, Chicago, Ill. Society headquarters are at 313 6th Ave., Pittsburgh.

PORCELAIN ENAMEL INSTITUTE, INC.—Annual meeting, Sept. 24-26, White Sulphur Springs, W. Va. Institute headquarters are at 1145 19th St., N.W., Washington 6, D. C.

PRESSED METAL INSTITUTE—Annual meeting, Sept. 13-17, Estes Park, Colorado. Institute headquarters are at 3673 Lee Rd., Cleveland.

STEEL FOUNDERS' SOCIETY OF AMERICA—57th Fall meeting, Sept. 21-22, The Homestead, Hot Springs, Va. Society headquarters are at 606 Terminal Tower, Cleveland.

OCTOBER

AMERICAN COKE AND COAL CHEMICALS INSTITUTE—14th Annual meeting, Oct. 19-20, The Greenbrier, White Sulphur Springs, W. Va. Institute headquarters are at 711 14th St., N.W., Washington.

AMERICAN GAS ASSN.—Annual convention, Oct. 5-7, Chicago. Association headquarters are at 420 Lexington Ave., New York.

AMERICAN GEAR MFRS. ASSN.—Semi-annual meeting, Oct. 25-28, The Edgewater Beach Hotel, Chicago. Association headquarters are at 1 Thomas Circle, Washington.

AMERICAN MACHINE TOOL DISTRIBUTORS ASSN.—Annual meeting, Oct. 25-26-27, The Statler Hotel, St. Louis, Mo. Association headquarters are at 1900 Arch St., Phila.

AMERICAN SOCIETY OF LUBRICATION ENGINEERS—ASLE/ASME Joint lubrication conference (Sixth) Oct. 19-20-21, Sheraton-McAlpin Hotel, New York. Society headquarters are at 84 E. Randolph St., Chicago.

AMERICAN SOCIETY FOR TESTING MATERIALS—3rd Pacific Area National meeting, Oct. 11-16, Sheraton-Palace Hotel, San Francisco, Calif. Society headquarters are at 1916 Race St., Phila.

AMERICAN STANDARDS ASSN.—Tenth National Conference on Standards and 41st Annual meeting, Oct. 20-21-22, Sheraton-Cadillac Hotel, Detroit. Association headquarters are at 70 E. 45th St., New York.

AMERICAN SOCIETY OF TOOL ENGINEERS—Semi-annual meeting, Oct. 8-10, St. Louis, Mo. Society headquarters are at 10700 Puritan Ave., Detroit.

CONVEYOR EQUIPMENT MFRS. ASSN.—Annual meeting, Oct. 10-13, Grand Hotel, Point Clear, Ala. Association headquarters are at 1 Thomas Circle, Washington.

THE ELECTROCHEMICAL SOCIETY, INC.—Fall meeting, Oct. 18-19-20-21-22, Deshler-Hilton Hotel, Columbus, O. Society headquarters are at 1860 Broadway, New York.

FARM EQUIPMENT INSTITUTE—Annual convention, Oct. 11-15, Queen Elizabeth Hotel, Montreal, Canada. Institute headquarters are at 608 S. Dearborn St., Chicago.

FOUNDRY EQUIPMENT MFRS. ASSN., INC.—Annual meeting, Oct. 15-16-17, Greenbrier Hotel, White Sulphur Springs, W. Va. Association headquarters are at 1 Thomas Circle, Washington.

GRAY IRON FOUNDERS' SOCIETY, INC.—Annual meeting, Oct. 7-8-9, Fairmont Hotel, San Francisco, Calif. Society headquarters are at 930 National City-E. 6th Bldg., Cleveland.

THE MAGNESIUM ASSN.—Annual convention, Oct. 19-20, New York. Association headquarters are at 123 E. 42nd St., New York.

NATIONAL METAL TRADES ASSN.—60th convention (biennial), Oct. 29-31, Sheraton-Biltmore Hotel, Providence, R. I. Association headquarters are at 337 W. Madison St., Chicago.

RAIL STEEL BAR ASSN.—Meeting, Oct. 19-21, The Bishop's Lodge, Santa Fe, New Mexico. Association headquarters are at 38 South Dearborn St., Chicago 3, Ill.

ROLLING MILL MACHINERY & EQUIPMENT ASSN.—Annual meeting, Oct. 26, Duquesne Club, Pittsburgh. Association headquarters are at 1026 Farmers Bank Bldg., Pittsburgh.

SCIENTIFIC APPARATUS MAKERS ASSN.—Midyear meeting of Laboratory Apparatus and Optical sections, Oct. 18-21, Lake Placid Club, Essex County, N. Y. Association headquarters are at 20 N. Wacker Drive, Chicago.

SCIENTIFIC APPARATUS MAKERS ASSN.—Midyear meeting of Industrial Instrument section, Oct. 25-29, Camelback Inn, Phoenix, Ariz. Association headquarters are at 20 N. Wacker Drive, Chicago.

STEEL CASTINGS INSTITUTE OF CANADA—Fall meeting, Oct. 15-16, Seignior Club, Monterello, P. Q., Canada. Institute headquarters are at 568 Booth St., Ottawa, Canada.

TRUCK BODY AND EQUIPMENT ASSN., INC.—12th Annual convention and exhibit, Oct. 5-6-7, The Sherman Hotel, Chicago, Ill. Association headquarters are at 1616 K St., N.W., Washington.

WIRE ASSN.—Annual convention, Oct. 12-15, Statler Hotel, Cleveland, O. Association headquarters are at 453 Main St., Stamford, Conn.

NOVEMBER

AIR-CONDITIONING AND REFRIGERATION INSTITUTE—Exposition, Nov. 2-5, Atlantic City, N. J. Institute headquarters are at 1346 Connecticut Ave., N.W., Washington.



"Gentlemen, this is going to be a brainstorming session. I will shoot out ideas in rapid-fire succession and you see how fast you can approve them."

AIRCRAFT INDUSTRIES ASSN. OF AMERICA—Annual meeting, Nov. 18-20, Arizona Biltmore Hotel, Phoenix, Ariz. Association headquarters are at 610 Shoreham Bldg., Washington.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC.—Annual convention, Nov. 30-Dec. 3, The Boca Raton Hotel & Club, Boca Raton, Fla. Institute headquarters are at 101 Park Ave., New York.

AMERICAN SOCIETY FOR METALS—(Annual) National Metal Exposition & Congress meeting, Nov. 2-6, International Amphitheatre, Chicago, Ill. Society headquarters are at 7301 Euclid Ave., Cleveland.

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS—Annual meeting, Nov. 29-Dec. 4, Chalfonte Haddon Hall, Atlantic City, N. J. Society headquarters are at 29 W. 39th St., New York.

ANTI-FRICTION BEARING MFRS. ASSN., INC.—Annual meeting, Nov. 3-5, The Cloister, Sea Island, Ga. Association headquarters are at 60 E. 42nd St., New York.

INSTITUTE OF METALS DIV., AIME—Fall meeting, Nov. 2-6, Morrison Hotel, Chicago. Institute headquarters are at 29 W. 39th St., New York.

METAL TREATING INSTITUTE—Annual meeting, Nov. 5-6-7, Hotel Sheraton, Chicago, Ill. Institute headquarters are at 271 North Ave., New Rochelle, N. Y.

NATIONAL ELECTRICAL MFRS. ASSN.—Annual meeting, Nov. 9-13, Traymore Hotel, Atlantic City, N. J. Association headquarters are at 155 E. 44th St., New York.

NATIONAL FOUNDRY ASSN.—61st Annual meeting, Nov. 5-6, Hotel Roosevelt, New York. Association headquarters are at 53 W. Jackson Blvd., Chicago, Ill.

NATIONAL MACHINE TOOL BUILDERS' ASSN.—Annual meeting, Nov. 19-21, The Greenbrier, White Sulphur Springs, Va. Association headquarters are at 2071 E. 102nd St., Cleveland.

NATIONAL SCREW MACHINE PRODUCTS ASSN.—Annual Fall membership meeting, Nov. 15-19, Americana Hotel, Bal Harbour, Fla. Association headquarters are at 2560 E. 130th St., Cleveland.

NATIONAL TOOL & DIE MFRS. ASSN.—Annual convention, Nov. 4-8, Statler Hotel, New York. Association headquarters are at 907 Public Square Bldg., Cleveland.

SOCIETY FOR NONDESTRUCTIVE TESTING, INC.—19th Annual convention, Nov. 2-6, Hotel Hamilton, Chicago, Ill. Society headquarters are at 1109 Hinman St., Evanston, Ill.

STEEL FOUNDERS' SOCIETY OF AMERICA—14th Technical & Operating conference, Nov. 9-10-11, Carter Hotel, Cleveland, O. Society headquarters are at 606 Terminal Tower, Cleveland.

DECEMBER

ELECTRIC FURNACE STEEL COMMITTEE—17th Annual conference, Dec. 2-4, Hotel Cleveland, Cleveland. Committee headquarters are at 29 W. 39th St., New York.

ELECTRONIC INDUSTRIES ASSN.—Quarterly meeting, Dec. 2-3-4, Statler Hilton, Los Angeles, Calif. Association headquarters are at 1721 DeSales St., N.W., Washington.

NATIONAL ASSN. OF MFRS.—Annual meeting, Dec. 2-4, New York. Association headquarters are at 2 East 48th St., New York.

NATIONAL WARM AIR HEATING AND AIR CONDITIONING ASSN.—Meeting, Dec. 1-2-3-4, Chase Park Hotel, St. Louis, Mo. Association headquarters are at 640 Engineers Bldg., Cleveland.



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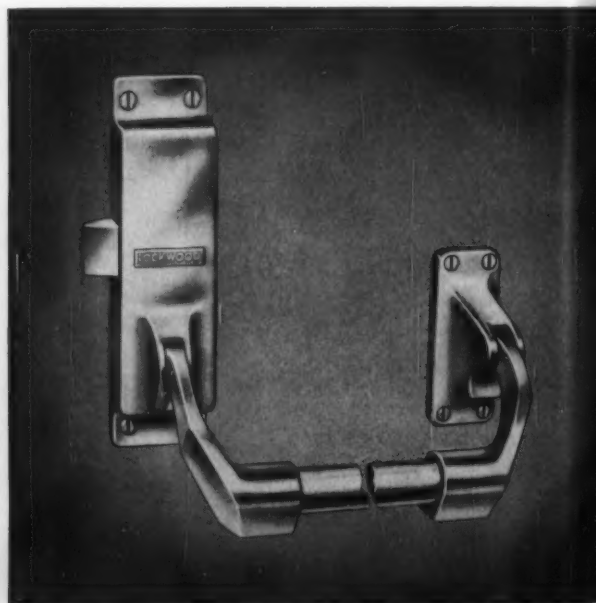
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CROWDS of children leaving a burning school—their safety depending upon the open door and on the smooth, perfect operation of the panic opening device. Latches of this kind are designed to meet and pass a supreme test of efficiency—a test they will probably never need to undergo. But should an emergency occur, the latch must operate completely and perfectly.

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If you have a product involving the use of spring wire or any other type of wire, get in touch with American Steel & Wire. The same controlled quality, dependability, and uniformity are available to every fabricator who uses USS American Manufacturers Wire in the products he produces. Just write to American Steel & Wire, 614 Superior Ave., N.W., Cleveland 13, Ohio.

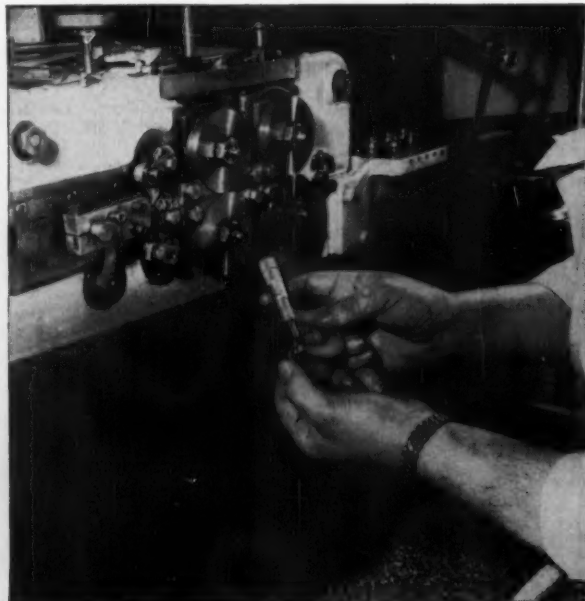
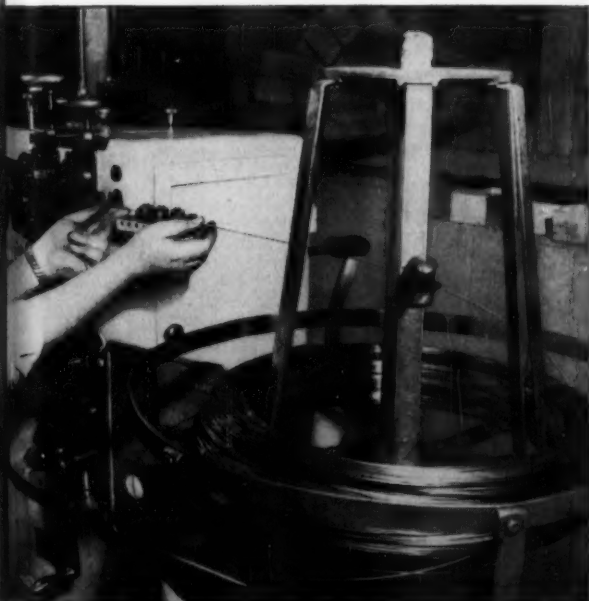
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METAL WORKING GROUPS

Trade Association Directory

Here is an up-to-date list of metalworking trade associations and technical societies.

Names of society officers and headquarters addresses are included.

Air Conditioning and Refrigeration Institute
1346 Connecticut Ave., N.W., Washington 6, D. C.
Managing Dir.: G. S. Jones, Jr.

Aircraft Industries Assn. of America
610 Shoreham Bldg., Washington 5, D. C.
Pres.: General Orval R. Cook, USAF

Air Moving & Conditioning Assn., Inc.
2159 Guardian Bldg., Detroit 26, Mich.
Exec. Vice Pres.: Marshall F. Allen

Alloy Casting Institute
286 Old Country Rd., Mineola, N. Y.
Exec. Vice Pres.: E. A. Schoefer

The Aluminum Assn.
420 Lexington Ave., New York 17, N. Y.
Secy.: Donald M. White

Aluminum Extruders Council
1015 Chestnut St., Philadelphia, Pa.
Exec. Secy.: Walter H. Gebhart

Aluminum Smelters Research Institute
20 N. Wacker Drive, Chicago 6, Ill.
Secy.: Carl H. Burton

Aluminum Wares Assn.
1806 First National Bank Bldg.,
Pittsburgh 22, Pa.
Secy.: Stuart J. Swenson

Aluminum Window Manufacturers Assn.
75 West St., New York 6, N. Y.
Exec. Secy.: Donald V. Reed

American Boiler Mfrs. Assn. and Affiliated Industries
4062 Mayfield Rd., Cleveland 21, Ohio
Secy.: A. G. Baker

American Bureau of Metal Statistics
50 Broadway, New York, N. Y.
Dir.: R. R. Eckert

American Coke & Coal Chemicals
711 Fourteenth St., N.W., Washington 5, D. C.
Exec. Secy.: Bernard M. Fitzgerald

American Die Casting Institute
366 Madison Ave., New York 17, N. Y.
Secy.: David Laine

American Electroplaters' Society
445 Broad St., Newark 2, N. J.
Exec. Secy.: John P. Nichols

American Foundrymen's Society
Golf and Wolf Rds., Des Plaines, Ill.
Gen'l. Mgr.: W. W. Maloney

American Gas Assn.
420 Lexington Ave., New York 17, N. Y.
Managing Dir.: C. S. Stackpole

American Gear Manufacturers Assn.
One Thomas Circle, Washington 5, D. C.
Exec. Dir.: John C. Sears

American Hardware Manufacturers Assn.
342 Madison Ave., New York 17, N. Y.
Secy.: A. L. Faubel

American Home Laundry Manufacturers' Assn.
20 N. Wacker Dr., Chicago 6, Ill.
Exec. Dir.: Guenther Baumgart

American Hot Dip Galvanizers Assn., Inc.
1806 First National Bank Bldg., Pittsburgh 22, Pa.
Secy.: Stuart J. Swenson

American Institute of Chemical Engineers
25 W. 45th St., New York, N. Y.
Exec. Secy.: V. J. Van

American Institute of Steel Construction, Inc.
101 Park Ave., New York 17, N. Y.
Exec. Vice Pres.: L. Abbett Post

American Iron and Steel Institute
150 East Forty-Second St., New York 17, N. Y.
Exec. Vice Pres.: Max D. Howell

American Iron Ore Assn.
1400 Hanna Bldg., Cleveland 15, Ohio
Pres.: Franklin G. Pardee

American Machine Tool Distributors Assn.
1900 Arch St., Philadelphia 3, Pa.
Gen'l. Mgr.: James C. Kelley

American Manganese Producers Assn.
National Press Bldg., Washington 4, D. C.
Pres.: J. C. Adkerson

American Mining Congress
1200 18th St., N.W., Washington 6, D. C.
Exec. Vice Pres.: Julian D. Conover

American Ordnance Assn.
704 17th St., N.W., Mills Bldg.,
Washington 6, D. C.
Exec. Vice Pres.: L. A. Codd

American Railway Car Institute
200 East 42nd St., New York 17, N. Y.
Pres.: Lester N. Selig

American Society for Metals
7301 Euclid Ave., Cleveland 3, Ohio

American Society for Testing Materials
1916 Race St., Philadelphia 3, Pa.
Exec. Secy.: Robert J. Painter

American Society of Lubrication Engineers
84 E. Randolph St., Chicago 1, Ill.
Admin. Secy.: Calvert L. Willey

American Society of Mechanical Engineers
29 W. 39th St., New York 18, N. Y.
Secy.: C. E. Davies

American Society of Tool Engineers
10700 Puritan Ave., Detroit 38, Mich.
Exec. Secy.: Harry E. Conrad

American Standards Assn.
70 E. 45th St., New York 17, N. Y.
Managing Dir.: G. F. Hussey

American Steel Warehouse Assn., Inc.
540 Terminal Tower, Cleveland 15, Ohio
Exec. Vice Pres.: Robert G. Welch

American Supply & Machinery Mfrs. Assn., Inc.
2130 Keith Bldg., Cleveland 15, Ohio
Business Mgr.: W. B. Thomas

American Tin Trade Assn., Inc.
24 State St., New York 4, N. Y.
Secy.: Joann Hill

American Welding Society, Inc.
33 W. 39th St., New York, N. Y.
National Secy.: Fred L. Plummer

American Weldment Manufacturers Assn.
332 S. Michigan Ave., Chicago 4, Ill.
Pres.: Byrne Marcellus

American Zinc Institute, Inc.
60 E. 42nd St., New York 17, N. Y.
Exec. Vice Pres.: J. L. Kimberley

Anti-Friction Bearing Manufacturers Assn., Inc.
60 E. 42nd St., New York 17, N. Y.
Secy.-Mgr.: H. O. Smith

Assn. of American Battery Manufacturers, Inc.
19 No. Harrison St., East Orange, N. J.
Exec. Secy.: B. F. Morris

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Transportation Bldg., Washington 6, D. C.
Chairman of the Board: W. T. Faricy

Assn. of Consulting Chemists and Chemical Engineers, Inc.
50 E. 41st St., New York 17, N. Y.
Secy.: R. T. Baldwin

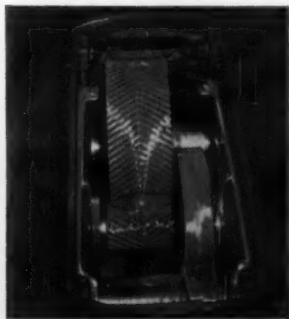


PHOTOS BY SPIEGEL

Snapshots from the Alten Album of Industrial Products and Services

What counts most in a good casting? Experience or the scientific knowledge of today's metallurgists? It's an academic question at Alten where foundry men with thirty and forty years' experience work side by side with highly trained metallurgical engi-

neers. The base casting being poured here will weigh approximately 2,100 pounds. Alten capacity extends to about 16,000 pounds. When you have a particularly large or difficult casting, gray iron or ductile, talk it over with an Alten engineer.



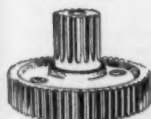
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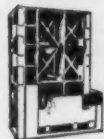
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Ductile
Iron Castings



Drums and
Housings



Machine Tool Parts

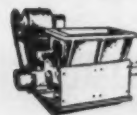
Gray and Alloy
Iron Casting

Parts or
Assemblies

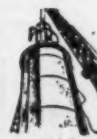
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Production,
Inspection



Hydraulic Pumps
and Valves



Custom-Built
Machinery



Metal
Fabrication

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One Gateway Center, Pittsburgh 22, Pa.
Managing Directors: Hanson & Shea, Inc.

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Exec. Secy.: A. L. Taylor

Assn. of Sprocket Chain Manufacturers
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Exec. Secy.: Mark L. Patterson

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Automotive Parts Manufacturing Assn.
16219 Meyers, Detroit 35, Mich.
Gen'l Mgr.: Frank Rising

Automotive Tool & Die Mfrs. Assn.
103 Pallister Ave., Detroit 2, Mich.
Managing Dir.: Chester A. Cahn

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Brass Forging Assn.
420 Lexington Ave., New York 17, N. Y.
Mgr.: T. E. Veltfort

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53 Park Pl., New York 7, N. Y.
Secy.: George P. Byrne

Broaching Tool Institute
74 Trinity Place, New York 6, N. Y.
Secy.: Montgomery S. Blake

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Exec. Dir.: H. Ferris White

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Prudential Plaza—Suite—3440, Chicago 1, Ill.
Managing Dir.: T. F. Wolfe

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Secy.: R. L. Ekstrand

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Secy.: Lester B. Platt

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Secy.: Frank P. Anderson

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11 W. 42nd St., New York 36, N. Y.
Secy.: F. B. Fetherston

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Secy.: R. W. Shearman

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Exec. Secy.: J. H. Peritz

Electric Tool Institute
318 Henrietta St., Kalamazoo, Mich.
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Enamelled Utensil Manufacturers Council
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Exec. Secy.: Douglas Hewit

Fine and Specialty Wire Manufacturers Assn.
839 17th St., Washington 6, D. C.
Secy.: W. A. Penrose

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759 One Gateway Center, Pittsburgh 22, Pa.
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Law & Finance Bldg., Pittsburgh 18, Pa.
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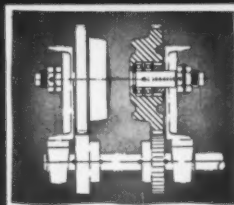
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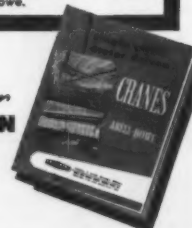
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Exec. Secy.: Jehu R. Derrickson

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Exec. Secy.: C. R. Heller

Foundry Supply Manufacturers Assn.
1508 Law & Finance Bldg., Pittsburgh 19, Pa.
Exec. Sec.: G. D. Shrum

Galvanized Ware Manufacturers Council
Keith Bldg., Cleveland 15, Ohio
Mgr.: W. B. Thomas

Gas Appliance Manufacturers Assn., Inc.
60 E. 42nd St., New York 17, N. Y.
Managing Dir.: Harold Massey

Gray Iron Founders' Society, Inc.
930 National City-E. 6th Bldg., Cleveland 14, Ohio
Exec. Vice Pres.: D. H. Workman

Grinding Wheel Institute
2130 Keith Bldg., Cleveland 15, Ohio
Mrgs.: Hunter-Thomas Associates

Hack and Band Saws Manufacturers Assn. of America
1015 Chestnut St., Philadelphia 7, Pa.
c/o Walter Gebhart Organization

Heat Exchange Institute
122 E. 42nd St., New York 17, N. Y.
Secy.: Frank P. Anderson

Heating and Cooling Coil Manufacturers' Assn.
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Secy.: R. E. O'Rourke

Hloist Manufacturers Assn., Inc.
One Thomas Circle, Washington 5, D. C.
Exec. Secy.: J. H. Peritz

Hollow Metal Door and Buck Assn.
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Exec. Secy.: Sidney O. Raphael

Hydraulic Institute
122 E. 42nd St., New York 17, N. Y.
Secy.: Frank P. Anderson

Industrial Diamond Assn. of America, Inc.
Box 175, Pompton Plains, N. J.
Exec. Mgr.-Sec.: Mrs. M. J. McGinnis

Industrial Fasteners Institute
1517 Terminal Tower, Cleveland 13, Ohio
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Exec. Vice Pres.: Robert E. Fleming

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420 Lexington Ave., New York 17, N. Y.
Secy.-Treas.: V. P. Gopcevic

Industrial Truck Assn.
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Managing Dir.: William Van C. Brandt

Industrial Wire Cloth Institute
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Secy.: Jarrett H. Buys

Insect Wire Screening Bureau
75 West St., New York 6, N. Y.
Secy.: Ralph W. Bacon

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Shoreham Hotel, Washington 8, D. C.
Managing Dir.: Samuel Dunckel

Institute of Boiler and Radiator Manufacturers
608 Fifth Ave., New York 20, N. Y.
Gen. Mgr.: R. E. Ferry

Institute of Metals Div., AIME
29 W. 39th St., New York 18, N. Y.
Secy.: E. O. Kirkendall

Institute of Scrap Iron and Steel, Inc.
1729 H St., N.W., Washington 6, D. C.
Exec. Vice Pres.: Edwin C. Barringer

Instrument Society of America
313 6th Ave., Pittsburgh 22, Pa.
Exec. Dir.: William K. Kushnick

Internal Combustion Engine Institute
201 N. Wells Bldg., Chicago 6, Ill.
Exec. Secy.: Charles G. Spice

International Acetylene Assn.
30 E. 42nd St., New York 17, N. Y.
Secy.: L. G. Matthews

International Tin Study Group
7 Carel van Bylandtlaan, The Hague, Netherlands
Secy.-Gen.: W. Fox

Investment Casting Institute
27 E. Monroe St., Chicago 3, Ill.
Exec. Dir.: H. B. Dolan

Iron & Steel Div., AIME
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Secy.: E. O. Kirkendall

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60 E. 42nd St., New York 17, N. Y.
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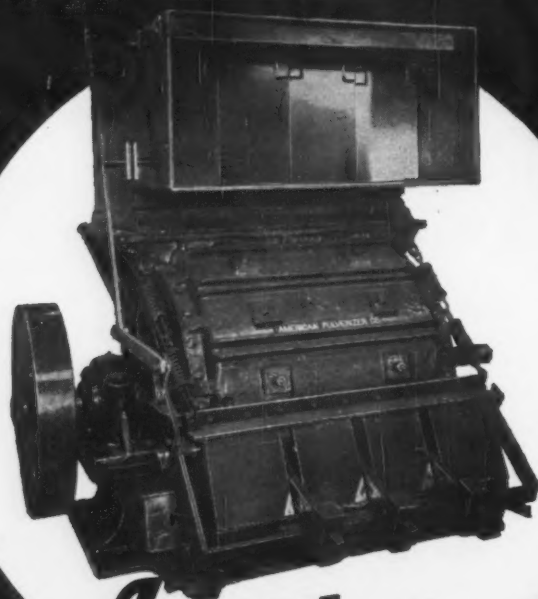
DURALOY Company

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240 Tons Metal Turnings per Year	\$ 960.00
(20 tons/month at \$4 extra per ton)	
6,000 Gallons Recovered Cutting Oil at 30¢/Gal.	\$1,800.00
(50 gals. per ton x 240 tons = 12,000 gals.)	
Half of this, 6,000 gals., can be credited to use of chips instead of turnings in reclamation)	
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TOTAL GROSS PROFIT	\$3,060.00

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Exec. Dir.: R. K. Vinson
- Machinery-Metals Export Club
330 W. 42nd St., New York 36, N. Y.
Secy.-Treas.: K. P. Bliss
- Magnesium Assn.
122 E. 42nd St., New York 17, N. Y.
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11 S. LaSalle St., Chicago 3, Ill.
Exec. Secy.: Mark L. Patterson
- Malleable Founders' Society
1800 Union Commerce Bldg., Cleveland 14, Ohio
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- Manufacturers Standardization Society of the Valve and Fittings Industry
420 Lexington Ave., New York 17, N. Y.
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- Marking Device Assn.
912 Chicago Ave., Evanston, Ill.
Secy. & Gen. Mgr.: Elmer F. Way
- The Material Handling Institute, Inc.
One Gateway Center, Pittsburgh 22, Pa.
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- Metal Cutting Tool Institute
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- Metal Ladder Manufacturers Assn.
Box 617, Randolph, N. Y.
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- Metal Lath Manufacturers Assn.
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Secy.: R. W. Shearman
- Metal Powder Federation
130 W. 42nd St., New York 36, N. Y.
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- Metal Treating Institute
271 North Ave., New Rochelle, N. Y.
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- Mining and Metallurgical Society of America
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Secy.: R. Bruce Wall
- National Assn. of Architectural Metal Mfrs.
228 North LaSalle St., Chicago 1, Ill.
Exec. Secy.: W. N. Wilson
- National Assn. of Corrosion Engineers
1061 M & M Bldg., Houston 2, Texas
Exec. Secy.: T. J. Hull
- National Assn. of Engineering Companies
Guardian Bldg., Detroit 26, Mich.
Exec. Secy.: R. A. Sullivan
- National Assn. of Manufacturers
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Secy.: David M. Reeves
- National Assn. of Pipe Nipple Manufacturers, Inc.
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Exec. Secy.: H. A. Long, Jr.
- National Assn. of Purchasing Agents
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Exec. Secy.-Treas.: G. W. Howard Ahl
- National Assn. of Sheet Metal Distributors
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- National Assn. of Waste Material Dealers, Inc.
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- National Electrical Manufacturers Assn.
155 E. 44th St., New York 17, N. Y.
Managing Dir.: J. F. Miller
- National Foundry Assn.
53 W. Jackson Blvd., Chicago 4, Ill.
Exec. Secy.: Charles T. Sheehan
- National Machine Tool Builders Assn.
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Exec. Vice Pres.: Ludlow King
- National Metal Spinners Assn.
186 Jorammon St., Brooklyn 2, N. Y.
Secy.: Max M. Goldhaber
- National Metal Trades Assn.
357 W. Madison St., Chicago 6, Ill.
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- National Openhearth Committee, Iron & Steel Div., AIME
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Secy.: E. O. Kirkendall

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907 Public Square Bldg., Cleveland 13, Ohio
Exec. Vice Pres.: George S. Eaton

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Exec. Secy.: Allen R. Smith

National Warm Air Heating and Air Conditioning Assn.
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Secy.: George Boeddener

National Welding Supply Assn.
1900 Arch St., Philadelphia 3, Pa.
Secy.: Robert C. Fernley

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Exec. Secy.: James W. Wolfe

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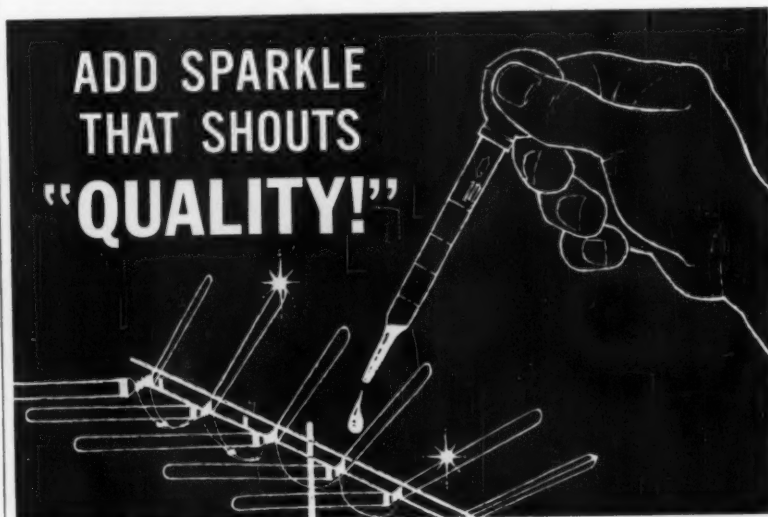
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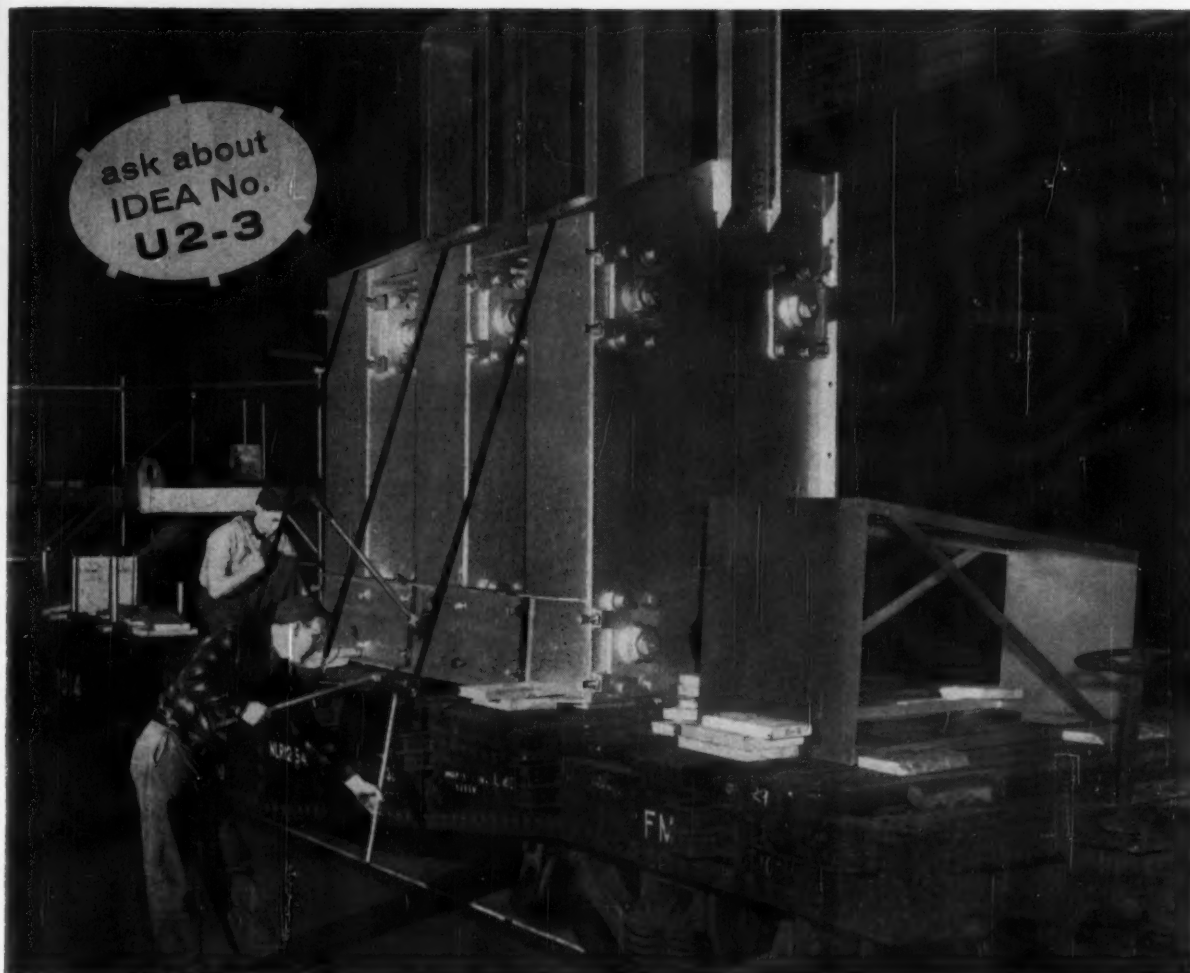


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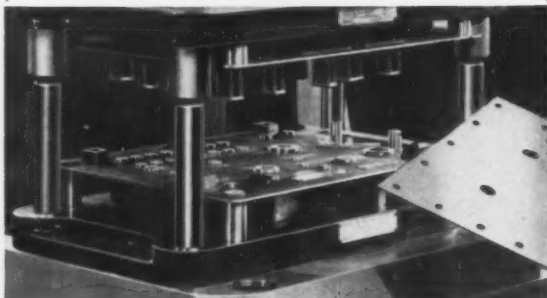
*Consult your Acme Idea Man for advice on ways to better protect your products for handling, shipping, storage. His Ideas-in-Action files contain scores of performance-proved Ideas that can be adapted to meet your needs. Write Dept. IFU-19, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Ave., Toronto 13, Ontario.

Acme Idea Man
Andy Bassi helps
Whiting Corporation
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problems.



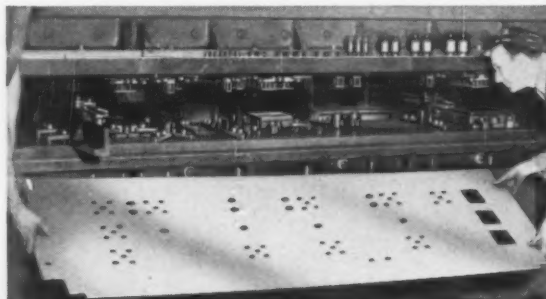
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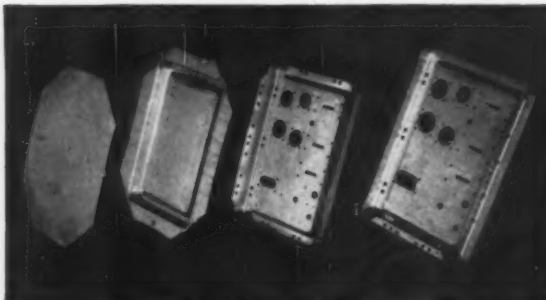
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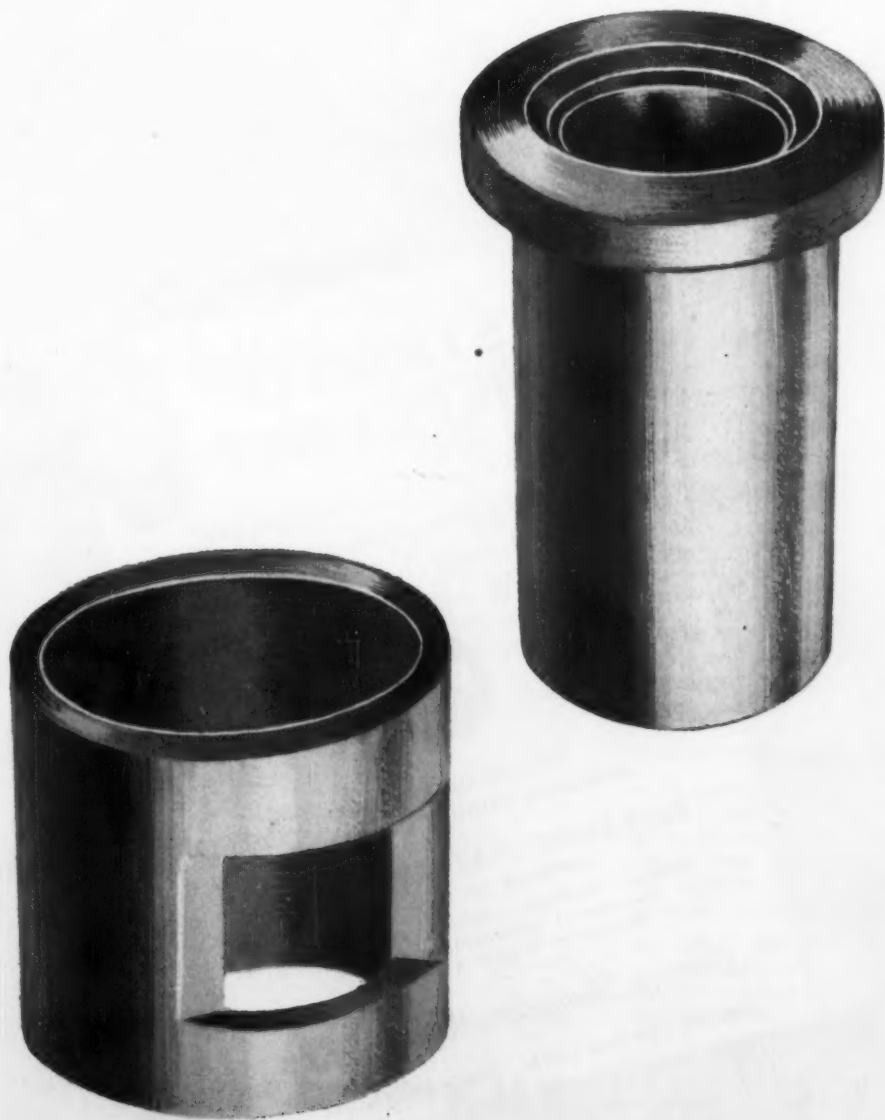
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Prop-jet's anti-icing ducts take high heat and pressure in stride

The anti-icing system of a new prop-jet airliner was designed to operate under high heat and pressure, yet the ducting had to be as light as possible. AM350 was specified. Both AM350 and AM355, Allegheny Ludlum's precipitation-hardening stainless steels, have strength/weight ratios at 600F five times greater than the usual aluminum aircraft alloy. In fact, AM350 and AM355 maintain high strength from room temperature up to 1000F.

These space age metals have other properties highly desirable: excellent corrosion resistance, ease of fabrication, low temperature heat treatment, good resistance to stress corrosion.

These features have been used to advantage in airframe structural members, airframe skins, pressure tanks, power plant components, high pressure ducting, nacelles and other missile and supersonic aircraft applications.

availability: AM350, introduced several years ago, is available commercially in sheet, strip, foil, small bars and wire. AM355, best suited for heavier sections, is available commercially in forgings, forging billets, plates, bars and wire.

corrosion resistance: Compared to the more familiar

stainless grades, AM350 and AM355 resist corrosion and oxidation better than the hardenable grades (chromium martensitic) and only slightly less than the 18 and 8's. They resist stress corrosion at much higher strength levels than do martensitic stainless grades.

simple heat treatment: High strength is developed by two methods. Both minimize oxidation and distortion problems. The usual is the Allegheny Ludlum-developed sub-zero cooling and tempering (SCT): minus 100F for 3 hrs plus 3 hrs at 850F. Alternate method is Double Aged (DA): 2 hrs at 1375F plus 2 hrs at 850F.

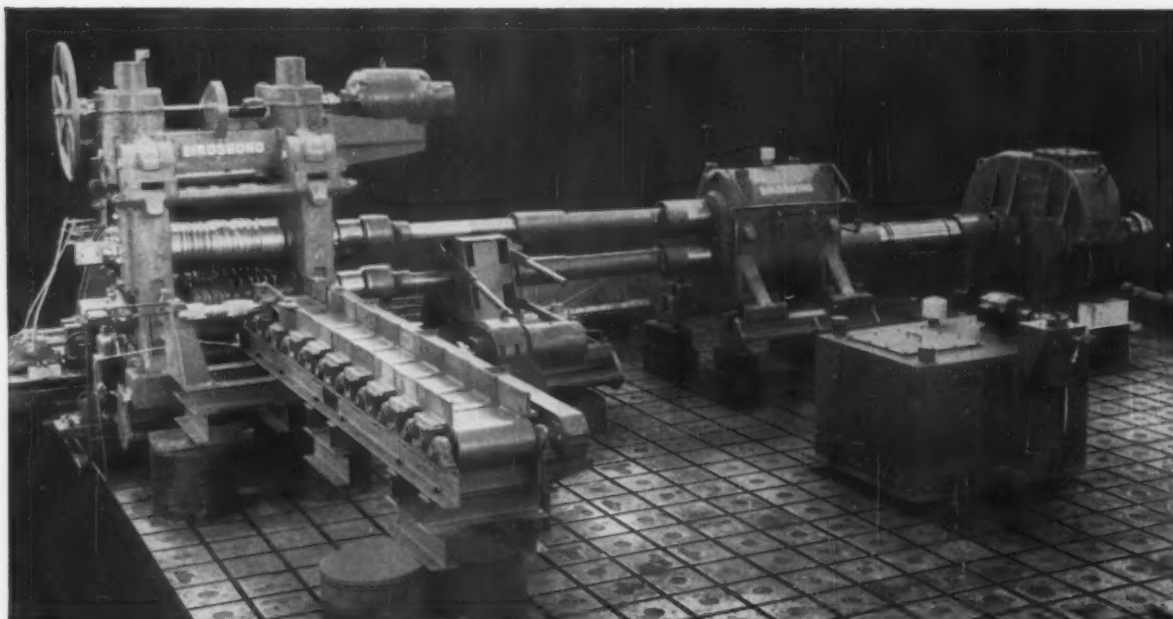
easy fabrication: AM350 and AM355 can be spun, drawn, formed, machined and welded using normal stainless procedures. In the hardened conditions, some forming may be done . . . 180 degree bend over a 3T radius pin. Also AM350 can be dimpled in the SCT condition to insure accurate fit-up.

For further information, see your A-L sales engineer or write for the booklet "Engineering Properties, AM350 and AM355." Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa. Address Dept. A-13.

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BIRDSBORO *hot mill to roll refractory metals* *at 3500° to 4000° in Universal-Cyclops' IN-FAB Facility*

Other important features

- ▶ A hydraulic system operates the auxiliary manipulators, the pinch rolls, the moving side guard and the mill stand transverse motion. It has an automatic oil lubrication system.
- ▶ Each new pass requires a transverse motion of the entire mill stand (the universal spindles are telescoping) in relation to the fixed material entry position on the table.
- ▶ The transverse mill stand motion is accomplished by a hydraulic cylinder remotely controlled from the pulpit with a potentiometer circuit.
- ▶ Purpose of the mill stand transverse motion is to eliminate costly manipulators and bar-turning devices which are needed in high production mills.

• This new combination 16"-14" two-high reversing mill will roll refractory metal flats, squares and rounds in an inert atmosphere. Designed and built by Birdsboro, it can roll 2½" to ½" rounds and squares starting with 4" x 4" billets. The mill is 90% mechanized to reduce the number of men needed to operate it and to minimize production costs.

All rolling will be done automatically and controlled by an operator in a remote pulpit. The air is replaced by argon gas so Universal-Cyclops Steel Corporation can efficiently fabricate refractory metals at their best working temperatures. Employees will work in gas tight suits, entering the plant through an air lock.

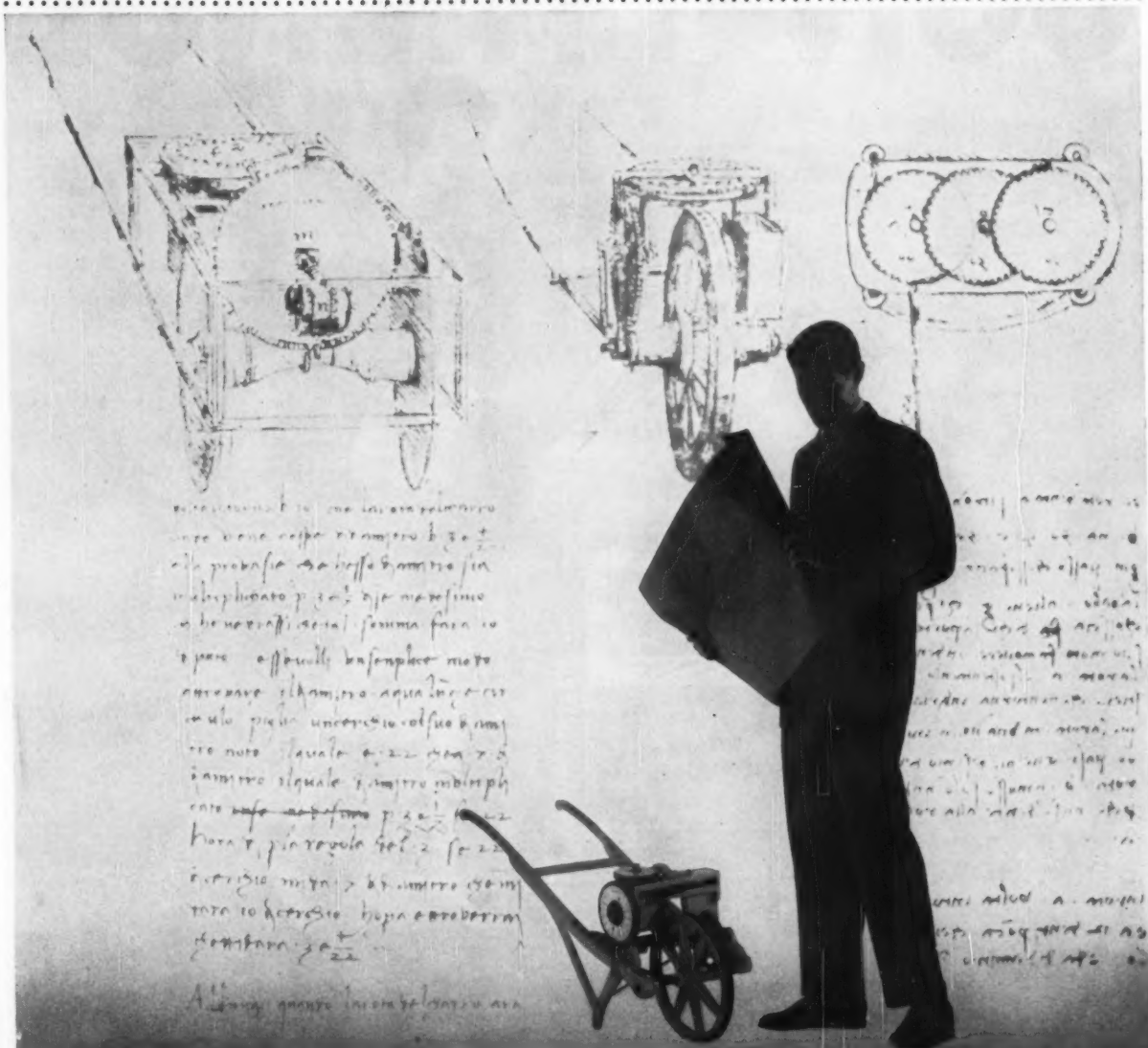
Birdsboro's custom-engineering of special machinery frequently adds the all-important creative element to mill machinery design and building. This creativity is proving to be worth profit dollars for Birdsboro customers. Contact your nearest Birdsboro representative or the Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa., *Main Office, Engineering Department and Plant: Birdsboro, Pa., District Office: Pittsburgh, Pa.*

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Model courtesy of IBM

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The Iron Age Summary

What Steel Men Expect in '59

Steel producers are unanimous in predicting that 1959 will be better than 1958.

But some are more optimistic than others. Labor uncertainty clouds the outlook.

Here's what prominent steel men are saying about their market prospects for 1959:

Roger M. Blough, chairman, U. S. Steel Corp.—"The American steel industry, rapidly recovering from the third post-war recession, has prospects of reaching an operating rate of about 80 pct of present capacity (1958 capacity of 141 million ingot tons) during the first six months of 1959—an increase of approximately 45 pct over sharply curtailed operations in the first half of 1958.

"The industry can reasonably expect improved shipments in the next six months to such major steel customers as the construction industry, farm implements, appliances, machinery, and automotive. Probably the largest gain in ship-

ments will be made to the automotive industry which moved up sharply in November and December."

T. F. Patton, president, Republic Steel Corp.—"Production should improve in each quarter, with the only question mark being the possibility of a steel strike in July. Total ingot production is likely to be over 102 million but under 110 million ingot tons—a gratifying 20 to 30 pct increase over the 85 million tons estimated for 1958.

"Steel production will be considerably under capacity in 1958, but 'capacity' to the steel industry today, for the first time in many years, represents a safe and desirable margin over expected normal demand."

Avery C. Adams, chairman, Jones & Laughlin Steel Corp.—"Operations for the year will be just under 80 pct of capacity, for a total of 115 million ingot tons. First quarter operations will be at 80 pct, second quarter at 91 pct, third quarter at 68 pct, and fourth quarter at 78 pct."

Max D. Howell, executive vice president, American Iron and Steel Institute—"The uptrend in iron and steel production will continue during 1959. The new year's output of ingots and steel for castings will be 100 to 110 million net tons, barring unforeseen interruptions, compared with about 85 million tons during 1958 and 117 million tons in the record year 1955.

"In recent months, the output has come a long way up the recovery road. Monthly production was 55 pct higher in November as compared to the low point last April. About nine million tons more steel was made in the last half of 1958 than in the initial six months of the year."

Joseph L. Block, president, Inland Steel Co.—"I believe steel ingot production in the first half will aggregate between 55 and 58 million tons . . . I am inclined to believe that steel production (in the second half) will be at about the same level as in the first six months."

Steel Output, Operating Rates

Production	This Week	Last Week	Month Ago	Year Ago
(Net tons, 000 omitted)	1,975	1,849	1,985	1,538
Ingot Index				
(1947-1949=100)	121.9	115.1	123.6	93.2
Operating Rates				
Chicago	85.0	84.0*	85.0	65.0
Pittsburgh	69.0	60.0*	69.0	49.5
Philadelphia	69.5	69.5*	68.0	60.0
Valley	57.0	43.0*	52.5	35.5
West	79.5	80.0*	82.0	70.0
Cleveland	76.0	74.0*	70.0	57.0
Buffalo	66.0	66.0	66.0	56.0
Detroit	67.0	67.0*	95.0	73.0
South	73.0	72.0	62.5	71.0
South Ohio River	85.5	85.5*	80.0	68.5
Upper Ohio River	85.0	72.5	84.5	57.0
St. Louis	90.5	72.5*	83.0	76.0
Aggregate	72.5	68.5	73.5	58.5

*Revised

Prices At a Glance

	This Week	Week Ago	Month Ago	Year Ago
(Cents per lb unless otherwise noted)				
Composite price				
Finished Steel, base	6.196	6.196	6.196	5.967
Pig Iron (gross ton)	\$66.41	\$66.41	\$66.41	\$66.42
Scrap No. 1 hvy				
(Gross ton)	\$39.83	\$39.83	\$40.17	\$32.83
No. 2 bundles	\$29.00	\$29.00	\$28.33	\$24.50
Nonferrous				
Aluminum ingot	26.80	26.80	26.80	28.10
Copper, electrolytic	29.00	29.00	29.00	27.00
Lead, St. Louis	12.80	12.80	12.80	12.80
Magnesium	36.00	36.00	36.00	36.00
Nickel, electrolytic	74.00	74.00	74.00	74.00
Tin, Straits, N. Y.	99.00*	99.00*	99.25	92.75
Zinc, E. St. Louis	11.50	11.50	11.50	10.00

Battle of the Office Furniture

Wood and metal are bumping heads trying to penetrate each other's domain.

The consumer is the clear winner as wood aims at the general office, and metal at the executive suite.

■ In today's office furniture market, metal and wood are bumping into each other in the doorway to the executive suite. Metal is trying to get in. And wood is trying to get out on the floor with the hired help.

The main weapons in these drives to increase penetration of the rival material's main market are design and prices.

Consumer Ahead—Meanwhile it is the consumer who benefits. Never before has there been such

a wide choice of materials, styles, colors and decors, right out of stock. Deliveries are prompt.

And there are extras. Almost every major maker or distributor has a designer at your service to plan a new office layout. Modular construction gives wide flexibility at stock prices. And some firms will even supply accessories at cost.

Design Improvements — Both wood and metal makers have made great strides in design in the last few years. They have taken a basic approach, consulting psychologists and management specialists on people's reactions and attitudes in various surroundings.

Wood has leaned toward plastic and other special finishes to meet metal's durability. And metals have looked to color, patterns and even

mock wood finishes to match wood's massive appearance and warmth.

Trends in the Office, a Wood Office Furniture Institute publication, describes a line of wood furniture as "... the finer way to show functional dignity together with that warmth of cordiality which makes and keeps business friends."

Metal Advantages — John A. Saunders, manager of furniture sales, General Fireproofing Co., describes their line of "Italic" metal office furniture: "It is bold and it is forthright in design—and it remains masculine in character through tasteful intermingling of exciting new materials and fresh new colors."

On price there is no clear-cut advantage either. A major maker of metal office furniture on the East Coast says it "can do anything wood can do in customizing executive offices, and at two-thirds the cost."

The wood furniture makers point to a 1957 survey by the U. S. Bureau of Census Facts pointing out wood equipment is less costly.

Cost—The survey reports these average 1957 manufacturer prices:

Metal chairs	\$27.44
Wood chairs	24.99
Metal desks	95.56
Wood desks	81.52

Market observers say this is one competition in which neither side is likely to lose. They say the streamlined equipment available is convincing more people to modernize their offices from stem to stern and widens the market.

Little change in total market penetration is forecast. The same survey that says wood costs less, gives metal 81.1 pct of the office furniture market in 1957.



STYLING: The whole works; desk, chair, accessories, even fabrics, comes from the same source, General Fireproofing Co., Youngstown. It is a service designed to land business in a highly competitive market.

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Sales Outlook Good For Early '59

At least through first six months of the year most products have a good chance of registering sales gains.

Right now sheet orders, coming from a variety of users, are pacing the market.

■ As the steel market turns into 1959, the sales outlook for most products is encouraging.

Sheet mills say orders are now showing across-the-board strength, with most buyers active. Automotive steel orders are helping keep the sheet market in high gear. Right now the automakers are buying steel at a rate in line with a car production rate of 6 million a year.

However, miscellaneous sheet users are also contributing to the increased volume. No leveling off is in sight. Orders indicate a steady climb in shipments through December, January, and February.

Bar has followed sheet in recovering since the summer of 1958. However, sales are still lagging behind the sheet market.

Plate has not, as yet, regained its sales zip. But improved linepipe production, more construction work, and possibly, increased capital spending should aid the plate market in '59.

Sales prospects for pipe mills are brightening. Linepipe orders will be picking up now that the adverse Memphis decision has been overruled. Oil country goods users are described as finally ready to halt stock cutting and start buying. Standard pipe sales, while not spectacular, have been inching upward for about the last six months.

Sheet—Mills say users are increasing the volume of their orders and booking tonnages further ahead. February sheet tonnage is coming in earlier than January's did. At one **Pittsburgh** mill January tonnage will be larger than December tonnage, and February orders now look better than January's.

Sheet deliveries vary in the **Chicago** area. Some producers can't guarantee delivery on newly booked tonnages before late February or early March. However, other mills are able to make deliveries late in January.

Plates and Shapes—Some **Chicago** mills are sold out through March on some wide plate sizes. Plate demand in that area seems to be gaining, on the basis of more linepipe orders and increased railroad carbuilding. However, structural sales are still lagging.

New missile test centers in the **Farwest** are using substantial

amounts of wide flange beams, channels, and I beams.

Bar—Orders for both hot-rolled and cold finished bars are improving, but still lag behind sheet. Bar-size structural sales are also better for **Pittsburgh** area mills. **Chicago** hot-rolled bar producers can still make fast deliveries, even though bar volume is stronger.

Reinforcing bars are arriving at inland U. S. markets in larger tonnages from overseas. They are under-selling American-made bars by as much as \$30 a ton. Some U. S. producers say their output is off 50 pct because of imports.

Republic Steel Corp. will soon begin producing leaded steel bars at its **Chicago** and **Buffalo** mills. These producing points are in addition to Republic's Alloy Steel Div. at **Canton-Massillon, Ohio**, already making this grade.

Pipe and Tubing—Producers of oil country seamless are encouraged by reports of more drilling activity. They also believe buyers are finally finished cutting inventories. Standard pipe sales are off seasonally as jobbers hold down orders to avoid larger year-end inventory taxes. Linepipe production is due to improve in the first quarter. As yet there are few signs that pipeline construction is ready to go back on a boom basis.

Tinplate — One **Pittsburgh** mill expects to operate tinning lines at capacity throughout the first half of '59. Right now its orders on the books are double what they were 30 days ago.

Service Centers — Large distributors in the **Midwest** are expecting a strong first quarter. Some are increasing sheet orders with mills by 25 pct. They are buying carbon and galvanized sheet, bar, strip, wire, rod, and some plate.

Warehouse sales personnel say some of their larger buyers are adding to regular monthly purchases and enlarging stocks. Smaller users are holding off on orders, avoiding tying up needed cash in inventories.

PURCHASING AGENT'S CHECKLIST

Metalworking—1959

Market Outlook — Full-scale forecasts on 12 major segments of U. S. industry . . . starts on p. 121

Executive Survey: Top men in 20 metalworking industries are generally optimistic about sales and profits, see wage-price spiral continuing . . . p. 153

Individual reports on each industry . . . begins on p. 160

COMPARISON OF PRICES

(Effective Dec. 29, 1958)

Steel prices on this page are the average of various f.o.b. quotations of major producing areas: Pittsburgh, Chicago, Gary, Cleveland, Youngstown.

Price advances over previous week are printed in Heavy Type; declines appear in *Italics*.

	Dec. 29 1958	Dec. 22 1958	Dec. 1 1958	Dec. 27 1957
Flat-Rolled Steel: (per pound)				
Hot-rolled sheets	5.10¢	5.10¢	5.10¢	4.925¢
Cold-rolled sheets	6.275	6.275	6.275	6.05
Galvanized sheets (10 ga.)	6.875	6.875	6.875	6.60
Hot-rolled strip	5.10	5.10	5.10	4.925
Cold-rolled strip	7.425	7.425	7.425	7.17
Plate	5.30	5.30	5.30*	5.12
Plates, wrought iron	13.55	13.55	13.55	13.15
Stainl's C-R strip (No. 302)	52.00	52.00	52.00	52.00
Tin and Terneplate: (per base box)				
Tinplate (1.50 lb.) cokes	\$10.65	\$10.65	\$10.65	\$10.30
Tin plates, electro (0.50 lb.)	9.35	9.35	9.35	9.00
Special coated mfg. ternes	9.90	9.90	9.90	9.55
Bars and Shapes: (per pound)				
Merchant bar	5.675¢	5.675¢	5.675¢	5.425¢
Cold finished bar	7.65	7.65	7.65	7.30
Alloy bars	6.725	6.725	6.725	6.475
Structural shapes	5.50	5.50	5.50	5.275
Stainless bars (No. 302)	45.00	45.00	45.00	45.00
Wrought iron bars	14.90	14.90	14.90	14.45
Wire: (per pound)				
Bright wire	8.00¢	8.00¢	8.00¢	7.65¢
Rails: (per 100 lb.)				
Heavy rails	\$5.75	\$5.75	\$5.75	\$5.525
Light rails	6.725	6.725	6.725	6.50
Semifinished Steel: (per net ton)				
Re-rolling billets	\$80.00	\$80.00	\$80.00	\$77.50
Slabs, re-rolling	80.00	80.00	80.00	77.50
Forging billets	99.50	99.50	99.50	96.00
Alloy blooms, billets, slabs	119.00	119.00	119.00	114.00
Wire Rods and Skelp: (per pound)				
Wire rods	6.40¢	6.40¢	6.40¢	6.15¢
Skelp	5.05	5.05	5.05	4.875
Finished Steel Composite: (per pound)				
Base price	6.196¢	6.196¢	6.196¢	5.967¢

Finished Steel Composite

Weighted index based on steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.

Pig Iron Composite

Based on averages for basic iron at Valley furnaces and foundry iron at Chicago, Philadelphia, Buffalo and Birmingham.

Pig Iron: (per gross ton)

	Dec. 29 1958	Dec. 22 1958	Dec. 1 1958	Dec. 27 1957
Foundry, del'd Phila.	\$70.57	\$70.57	\$70.57	\$70.51
Foundry, Southern Cin'ti	73.87	73.87	73.87	71.65
Foundry, Birmingham	62.50	62.50	62.50	62.50
Foundry, Chicago	66.50	66.50	66.50	66.50
Basic, del'd Philadelphia	70.07	70.07	70.07	70.01
Basic, Valley furnace	66.00	66.00	66.00	66.00
Malleable, Chicago	66.50	66.50	66.50	66.50
Malleable, Valley	66.50	66.50	66.50	66.50
Ferromanganese, 74-76 pct Mn, cents per lb.†	12.25	12.25	12.25	12.25

Pig Iron Composite: (per gross ton)

Pig iron	\$66.41	\$66.41	\$66.41	\$66.42
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Scrap: (per gross ton)

No. 1 steel, Pittsburgh	\$42.50	\$42.50	\$42.50	\$32.50
No. 1 steel, Phila. area	33.50	33.50	34.50	35.50
No. 1 steel, Chicago	43.50	43.50	43.50	30.50
No. 1 bundles, Detroit	35.50	35.50	34.00	19.50
Low phos., Youngstown	44.50	44.50	43.50	33.50
No. 1 mach'y cast, Pittsburgh	50.50	50.50	51.50	50.50
No. 1 mach'y cast, Phila.	48.50	48.50	49.50	50.50
No. 1 mach'y cast, Chicago	53.50	53.50	53.50	43.50

Steel Scrap Composites: (per gross ton)

No. 1 hvy. melting scrap	\$39.83	\$39.83	\$40.17	\$32.83
No. 2 bundles	29.00	29.00	28.33	24.50

Coke, Connellville: (per net ton at oven)

Furnace coke, prompt	\$14.50	\$14.50	\$14.50	\$15.38
Foundry coke, prompt	\$18-18.50	\$18-18.50	\$18-18.50	\$17.50-19

Nonferrous Metals: (cents per pound to large buyers)

Copper, electrolytic, Conn.	29.00	29.00	29.00	27.00
Copper, Lake, Conn.	29.00	29.00	29.00	27.00
Tin, Straits, N. Y.	99.00*	99.00*	99.25	92.75
Zinc, East St. Louis	11.50	11.50	11.50	10.00
Lead, St. Louis	12.80	12.80	12.80	12.80
Aluminum, virgin ingot	26.80	26.80	26.80	28.10
Nickel, electrolytic	74.00	74.00	74.00	74.00
Magnesium, ingot	36.00	36.00	36.00	36.00
Antimony, Laredo, Tex.	29.50	29.50	29.50	33.00

† Tentative. ‡ Average. * Revised.

Steel Scrap Composites

Average of No. 1 heavy melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

INDEX TO PRICE PAGES

Prices At a Glance	311
Comparison of Prices	315
Bars	326
Billets, Blooms and Slabs	324
Boiler Tubes	328
Bolts, Nuts, Rivets, Screws	329
Clad Steel	328
Coke	328
Electrical Sheets	328
Electrodes	328
Electroplating Supplies	329
Iron Ore	328
Merchant Wire Products	328
Metal Powders	329
Nonferrous	
Mill Products	322
Primary Prices	315-320-322
Remelted Metals	322
Scrap	322
Pig Iron	330
Piling	324
Pipe and Tubing	327
Plates	326
Rails	328
Refractories	328
Service Center Prices	329
Shapes	324
Sheets	325
Spring Steel	328
Stainless	330
Steel Scrap	318
Strip	324
Structurals	324
Tinplate	325
Tool Steel	328
Track Supplies	328
Water Pipe Index	329
Wire	326
Wire Rod	325

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Prices Hold, Upturn May Be Near

There appears no way for the market to go but up. Operating rates are climbing.

The year 1958 goes down as the worst in a decade for the scrap industry.

■ The scrap industry is entering the New Year with good reason to expect at least a moderate improvement in the market during the first half of 1959.

Mill operating rates are rising and should soon bring about a gradual rise in demand for scrap in the first quarter. But in the second quarter, scrap orders could pick up sharply. Possibility of a steel strike on July 1 may force the mills to step up their operations in order to fill as many steel orders as possible before the strike deadline.

Scrap men feel that there is no way for the market to go now but up.

"The year 1958 was the poorest for the iron and steel scrap industry since 1946," reports Edwin C. Barringer, executive vice president, Institute of Scrap Iron and Steel, Inc.

Approximately 22 million gross tons of purchased scrap was consumed by domestic mills and foundries during 1958, against an estimated 1957 consumption of 29.6 million tons.

Export markets during 1958 took only 2.6 million gross tons, compared with the all-time high of 5.9 million tons shipped in 1957.

The total of home scrap consumed, plus purchased scrap consumed, was about 50 million tons

against approximately 66 million tons in 1957—a decline of about 24 pct.

Pricewise, 1958 was also a year of depression. The IRON AGE No. 1 heavy melting Composite Price for the year averaged \$38.08, compared with \$46.75 in 1957, and \$53.81 in 1956, the record year.

In the last week of 1958, the Composite Price was unchanged at \$39.83—slightly above the average for the year.

Pittsburgh — The market here gathered strength during the holiday lull. There were spot purchases of No. 1 dealer bundles at prices ranging from \$45 down to \$43. But there was not enough activity to establish new levels. The market is expected to be tested now as shipments begin on a large order placed last month. There is anticipation of stepped-up buying generally by consumers.

Chicago—A slowdown in buying and selling reflected the usual holiday lull, without softening scrap prices. With the exception of some special grades, new bids are running higher than at the beginning of November. Reports of bidding up \$1 to \$2 on heavy melting and industrial bundles are frequent. A few lists, closing early, have already brought prices as much as \$1.50 higher than they did at the close of October.

Philadelphia — A local mill bought limited tonnages of No. 1 and No. 2 heavy melting at existing prices for January delivery. Mill inventories are still in good shape and there is little reason to expect

much activity in openhearth grades this month. A nearby foundry bought cupola cast at the quoted price.

New York—In an otherwise dead market, No. 2 bundles rose \$1 to a top of \$19 by virtue of a 35,000-ton purchase by a large mill in an adjacent district.

Detroit—Scrap prices appear to be holding steady, although trading has been light. The first industrial list closed early last week at prices unchanged from December.

Cleveland — Bidding on early auto lists was \$1 above a month ago, indicating some optimism. Tonnage from auto plants in this area is estimated at about the same as December.

Birmingham — The market here has dried up. There is no movement of openhearth scrap to area mills and very little electric furnace grades and cast. A few brokers are quoting lower prices to consumers without getting any response.

Cincinnati — Market tone is slightly improved and area mills are expected to make regular buys for January. This, together with strength in adjacent districts, may bring higher prices soon.

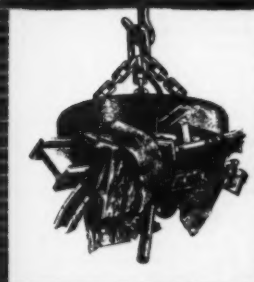
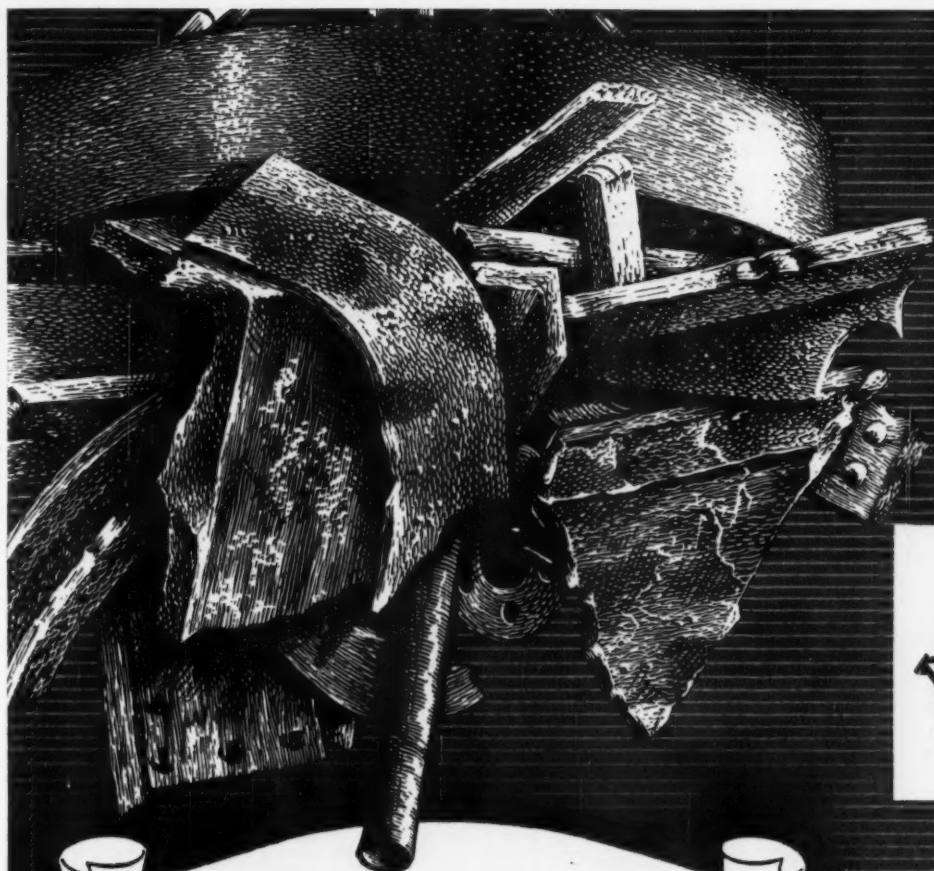
Buffalo — The market is quiet and prices, for the most part, are unchanged. Shoveling turnings are down \$2 to \$19-\$20, based on offerings.

Boston — The market continued quiet over the holidays. There was some hope of a pickup after the turn of the year.

West Coast—Prices are softening in San Francisco and Los Angeles. Dealers look for a price drop in January. Export orders didn't dry up the market.

St. Louis—A softer tone is noticeable here. Small amounts of scrap were sold at unchanged prices.

Houston—Light buying by the district mill sent openhearth scrap prices down as much as \$2.



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SCRAP PRICES (Effective Dec. 29, 1958)

Pittsburgh

No. 1 hvy. melting	\$42.00 to \$43.00
No. 2 hvy. melting	35.00 to 36.00
No. 1 dealer bundles	42.00 to 43.00
No. 1 factory bundles	48.00 to 49.00
No. 2 bundles	31.00 to 32.00
No. 1 busheling	42.00 to 43.00
Machine shop turn.	20.00 to 21.00
Shoveling turnings	24.00 to 25.00
Cast iron borings	24.00 to 25.00
Low phos. punch'g plate	48.00 to 49.00
Heavy turnings	36.00 to 37.00
No. 1 RR hvy. melting	45.00 to 46.00
Scrap rails, random lgth.	54.00 to 55.00
Rails 2 ft and under	57.00 to 58.00
RR specialties	48.00 to 49.00
No. 1 machinery cast.	50.00 to 51.00
Cupola cast.	44.00 to 45.00
Heavy breakable cast.	42.00 to 43.00
Stainless	
18-8 bundles and solids	225.00 to 230.00
18-8 turnings	125.00 to 130.00
430 bundles and solids	125.00 to 130.00
410 turnings	50.00 to 60.00

Chicago

No. 1 hvy. melting	\$43.00 to \$44.00
No. 2 hvy. melting	38.00 to 39.00
No. 1 dealer bundles	42.00 to 43.00
No. 1 factory bundles	48.00 to 49.00
No. 2 bundles	31.00 to 32.00
No. 1 busheling	42.00 to 43.00
Machine shop turn.	22.00 to 23.00
Mixed bor. and turn.	24.00 to 25.00
Shoveling turnings	24.00 to 25.00
Cast iron borings	23.00 to 24.00
Low phos. forge crops	52.00 to 53.00
Low phos. punch'g plate	48.00 to 49.00
Low phos. 3 ft and under	46.00 to 47.00
No. 1 RR hvy. melting	46.00 to 47.00
Scrap rails, random lgth.	52.00 to 53.00
Rerolling rails	63.00 to 64.00
Rails 2 ft and under	59.00 to 60.00
Angles and splice bars	54.00 to 55.00
RR steel car axles	71.00 to 72.00
RR couplers and knuckles	51.00 to 52.00
No. 1 machinery cast.	53.00 to 54.00
Cupola cast.	47.00 to 48.00
Heavy breakable cast.	41.00 to 42.00
Cast iron wheels	42.00 to 43.00
Malleable	56.00 to 57.00
Stove plate	44.00 to 45.00
Steel car wheels	52.00 to 53.00
Stainless	
18-8 bundles and solids	220.00 to 225.00
18-8 turnings	130.00 to 135.00
430 bundles and solids	115.00 to 120.00
430 turnings	65.00 to 70.00

Philadelphia Area

No. 1 hvy. melting	\$33.00 to \$34.00
No. 2 hvy. melting	30.00 to 31.00
No. 1 dealer bundles	34.00 to 35.00
No. 2 bundles	23.50 to 24.50
No. 1 busheling	33.00 to 34.00
Machine shop turn.	17.00 to 18.00
Mixed bor. short turn.	18.00 to 20.00
Cast iron borings	18.00 to 20.00
Shoveling turnings	20.00 to 22.00
Clean cast. chem. borings	32.00 to 33.00
Low phos. 5 ft and under	38.00 to 39.00
Low phos. 2 ft punch'g.	39.00 to 40.00
Elec. furnace bundles	35.00 to 37.00
Heavy turnings	29.00 to 30.00
RR specialties	43.00 to 44.00
Rails 18 in. and under	57.00 to 58.00
Cupola cast.	38.00 to 39.00
Heavy breakable cast.	40.00 to 41.00
Cast iron car wheels	44.00 to 45.00
Malleable	61.00 to 62.00
No. 1 machinery cast.	48.00 to 49.00

Cincinnati

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$36.00 to \$37.00
No. 2 hvy. melting	31.00 to 32.00
No. 1 dealer bundles	35.50 to 36.50
No. 2 bundles	24.00 to 25.00
Machine shop turn.	17.00 to 18.00
Shoveling turnings	20.00 to 21.00
Cast iron borings	18.00 to 19.00
Low phos. 18 in. and under	45.00 to 46.00
Rails, random length	49.00 to 50.00
Rails, 18 in. and under	55.00 to 56.00
No. 1 cupola cast.	44.00 to 45.00
Hvy. breakable cast.	39.00 to 40.00
Drop broken cast.	47.00 to 48.00

Youngstown

No. 1 hvy. melting	\$41.00 to \$42.00
No. 2 hvy. melting	33.00 to 34.00
No. 1 dealer bundles	41.00 to 42.00
No. 2 bundles	29.00 to 30.00
Machine shop turn.	19.50 to 20.50
Shoveling turnings	19.50 to 20.50
Low phos. plate	44.00 to 45.00

Iron and Steel Scrap

Going prices of iron and steel scrap as obtained in the trade by THE IRON AGE based on representative tonnages. All prices are per gross ton delivered to consumer unless otherwise noted.

Cleveland

No. 1 hvy. melting	\$37.50 to \$38.50
No. 2 hvy. melting	29.50 to 30.50
No. 1 dealer bundles	37.50 to 38.50
No. 1 factory bundles	44.00 to 45.00
No. 2 bundles	25.50 to 26.50
No. 1 busheling	37.50 to 38.50
Machine shop turn.	15.50 to 16.50
Mixed bor. and turn.	20.50 to 21.50
Shoveling turnings	20.50 to 21.50
Cast iron borings	20.50 to 21.50
Cut structural & plates, 2 ft & under	46.50 to 47.50
Drop forge flashings	37.50 to 38.50
Low phos. punch'g plate	38.50 to 39.50
Foundry steel, 2 ft & under	39.00 to 40.00
No. 1 RR hvy. melting	45.00 to 46.00
Rails 2 ft and under	56.00 to 57.00
Rails 18 in. and under	57.00 to 58.00
Steel axle turnings	25.00 to 26.00
Railroad cast.	50.00 to 51.00
No. 1 machinery cast.	49.00 to 50.00
Stove plate	45.00 to 46.00
Malleable	61.00 to 62.00
Stainless	
18-8 bundles	215.00 to 220.00
18-8 turnings	115.00 to 120.00
430 bundles	120.00 to 125.00

Buffalo

No. 1 hvy. melting	\$34.00 to \$35.00
No. 2 hvy. melting	27.00 to 28.00
No. 1 busheling	34.00 to 35.00
No. 2 dealer bundles	34.00 to 35.00
No. 2 bundles	25.00 to 26.00
Machine shop turn.	15.00 to 16.00
Mixed bor. and turn.	17.00 to 18.00
Shoveling turnings	19.00 to 20.00
Cast iron borings	15.00 to 16.00
Low phos. plate	39.00 to 40.00
Structurals and plate 2 ft and under	44.00 to 45.00
Scrap rails, random lgth.	46.00 to 47.00
Rails 2 ft and under	56.00 to 57.00
No. 1 machinery cast.	48.00 to 49.00
No. 1 cupola cast.	44.00 to 45.00

St. Louis

No. 1 hvy. melting	\$37.00 to \$38.00
No. 2 hvy. melting	35.00 to 36.00
No. 1 dealer bundles	40.00 to 41.00
No. 2 bundles	28.00 to 29.00
Machine shop turn.	18.00 to 19.00
Shoveling turnings	20.00 to 21.00
Cast iron borings	22.00 to 23.00
No. 1 RR hvy. melting	43.00 to 44.00
Rails, random lengths	47.00 to 48.00
Rails, 18 in. and under	51.00 to 52.00
Angles and splice bars	46.00 to 47.00
RR specialties	46.00 to 47.00
Cupola cast.	48.00 to 49.00
Heavy breakable cast.	38.00 to 39.00
Cast iron brake shoes	38.00 to 39.00
Stove plate	43.00 to 44.00
Cast iron car wheels	44.00 to 45.00
Rerolling rails	59.00 to 60.00
Unstripped motor blocks	39.00 to 40.00

Birmingham

No. 1 hvy. melting	\$35.00 to \$36.00
No. 2 hvy. melting	28.00 to 29.00
No. 1 dealer bundles	35.00 to 36.00
No. 2 bundles	21.00 to 22.00
No. 1 busheling	35.00 to 36.00
Machine shop turn.	21.00 to 22.00
Shoveling turnings	22.00 to 23.00
Cast iron borings	13.00 to 14.00
Electric furnace bundles	37.00 to 38.00
Elec. furnace, 3 ft & under	35.00 to 36.00
Bar crops and plate	42.00 to 43.00
Structural and plate, 2 ft.	41.00 to 42.00
No. 1 RR hvy. melting	37.00 to 38.00
Scrap rails, random lgth.	44.00 to 45.00
Rails, 18 in. and under	49.00 to 50.00
Angles and splice bars	45.00 to 46.00
Rerolling rails	54.00 to 55.00
No. 1 cupola cast.	52.00 to 53.00
Stove plate	53.00 to 54.00
Cast iron car wheels	41.00 to 42.00
Unstripped motor blocks	40.00 to 41.00

New York

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$26.00 to \$27.00
No. 2 hvy. melting	23.00 to 24.00
No. 2 dealer bundles	18.00 to 19.00
Machine shop turnings	10.00 to 11.00
Mixed bor. and turn.	13.00 to 14.00
Shoveling turnings	14.00 to 15.00
Clean chem. cast. borings	23.00 to 25.00
No. 1 machinery cast.	37.00 to 38.00
Mixed yard cast	35.00 to 36.00
Heavy breakable cast.	32.00 to 33.00
Stainless	
18-8 prepared solids	185.00 to 190.00
18-8 turnings	80.00 to 85.00
430 prepared solids	65.00 to 70.00
430 turnings	20.00 to 25.00

Detroit

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$33.00 to \$34.00
No. 2 hvy. melting	26.00 to 27.00
No. 2 dealer bundles	35.00 to 36.00
No. 2 bundles	21.00 to 22.00
No. 1 busheling	33.00 to 34.00
Drop forge flashings	32.00 to 33.00
Machine shop turn.	13.00 to 14.00
Mixed bor. and turn.	13.00 to 14.00
Shoveling turnings	15.00 to 16.00
Cast iron borings	15.00 to 16.00
Heavy breakable cast.	33.00 to 34.00
Mixed cupola cast.	41.00 to 42.00
Automotive cast.	46.00 to 47.00
Stainless	
18-8 bundles and solids	205.00 to 210.00
18-8 turnings	100.00 to 105.00
430 bundles and solids	105.00 to 110.00

Boston

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$24.00 to \$25.00
No. 2 hvy. melting	20.00 to 21.00
No. 1 dealer bundles	24.00 to 25.00
No. 2 bundles	13.00 to 14.00
No. 1 busheling	24.00 to 25.00
Machine shop turn.	8.00 to 9.00
Shoveling turnings	10.00 to 11.00
Clean cast. chem. borings	17.00 to 19.00
No. 1 machinery cast.	31.00 to 32.00
Mixed cupola cast.	31.00 to 32.00
Heavy breakable cast.	29.00 to 30.00
Stove plate	39.00 to 40.00

San Francisco

No. 1 hvy. melting	\$34.00
No. 2 hvy. melting	32.00
No. 1 dealer bundles	\$29.00 to 31.00
No. 2 bundles	22.00
Machine shop turn.	15.00
Cast iron borings	15.00
No. 1 cupola cast.	45.00

Los Angeles

No. 1 hvy. melting	\$37.00
No. 2 hvy. melting	35.00
No. 1 dealer bundles	\$33.00 to 34.00
No. 2 bundles	20.00
Machine shop turn.	15.00
Shoveling turnings	17.00 to 18.00
Cast iron borings	17.00 to 18.00
Elec. furn. 1 ft and under (foundry)	48.00
No. 1 cupola cast	47.00

Seattle

No. 1 hvy. melting	\$30.00
No. 2 hvy. melting	28.00
No. 2 bundles	22.00
No. 1 cupola cast.	36.00
Mixed yard cast.	36.00

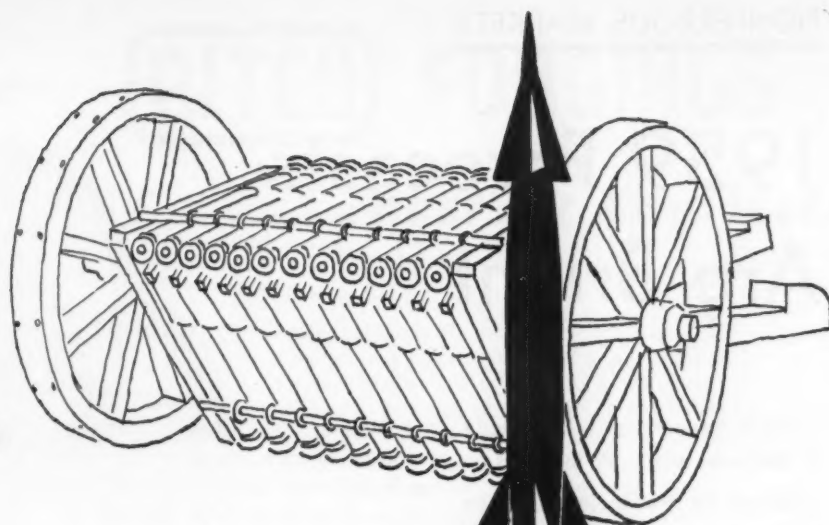
Hamilton, Ont.

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$32.50
No. 2 hvy. melting	28.50
No. 1 dealer bundles	32.50
No. 2 bundles	23.00
Mixed steel scrap	24.50
Bush., new fact., prep'd.	32.50
Bush., new fact., unprep'd	26.50
Machine shop turn.	17.00
Short steel turn.	13.00
Mixed bor. and turn.	37.00
Rails, rerolling	37.00
Cast scrap	\$39.00 to 41.00

Houston

Brokers buying prices per gross ton on cars:	
No. 1 hvy. melting	\$33.00
No. 2 hvy. melting	30.00
No. 2 bundles	22.50
Machine shop turn.	15.00
Shoveling turnings	19.00
Cut structural plate 2 ft under	\$39.00 to 40.00
Unstripped motor blocks	33.00 to 34.00
Cupola cast.	43.00 to 44.00
Heavy breakable cast.	26.50 to 27.50

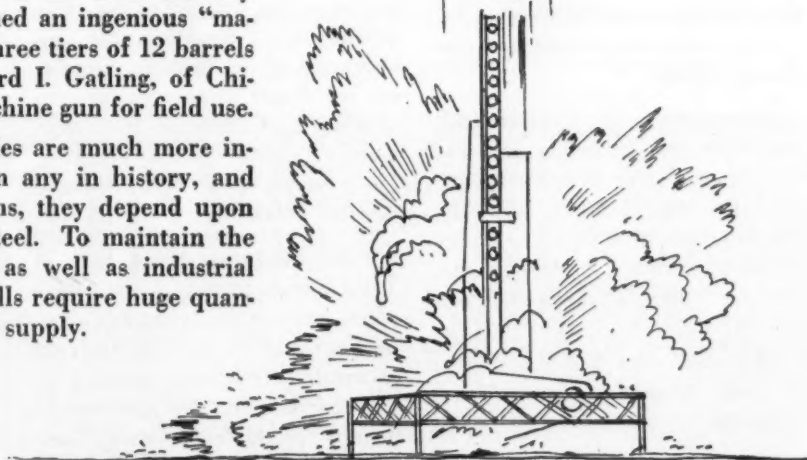
guided missiles



Prehistoric man threw a javelin. From ancient Egypt and Assyria down through the Middle Ages, foot soldiers shot arrows from long bows and cross bows.

With the invention of gun powder, new and more deadly weapons supplanted earlier missiles. About the end of the 15th Century Leonardo Da Vinci designed an ingenious "machine gun" consisting of three tiers of 12 barrels each. In 1862 Dr. Richard I. Gatling, of Chicago, invented a small machine gun for field use.

Today's guided missiles are much more ingenious and complex than any in history, and like most military weapons, they depend upon an unending supply of steel. To maintain the requirements of defense as well as industrial and civilian needs, the mills require huge quantities of scrap in constant supply.



For the purchase or sale of iron or steel scrap . . .

phone or write "Your Chicago Broker"



231 S. La Salle St., Chicago

Telephone ANDover 3-3900

1959 Forecasts Are Bright

You'll have to go a long way to find a bear on '59 business.

Latest to try their hands on calling the nonferrous shots are an auto company, the government and a scrap group.

■ The "what's ahead department" of an auto company recently peered into the near future of some of the major nonferrous metals. Generally, they liked what they saw.

Here's what they told their purchasing agents:

Aluminum — For primary pig aluminum and secondary 108 alloy they see "no change" in the price. Presumably this includes only the first half of 1959. The overwhelming weight of opinion expects a higher price in July or August.

The auto seers call the supply of both aluminum commodities "plentiful."

Copper — Domestic producers copper price is called "steady," and the supply "adequate."

Lead and Zinc—The prices for zinc, both prime western and die cast alloy No. 3, and pig lead are expected to "increase." The supply of both prime western and the zinc die cast alloy is likely to be "adequate to tight." The call on lead is "adequate to short."

Tin—According to this automaker the tin picture is the best it's been for some time. The price is expected to be "stable," and the supply "plentiful."

Actually, many sellers and producers of nonferrous metals will tell you the auto companies will have a lot to do with whether the predictions are accurate.

In copper, for instance, the U. S. Commerce Dept. report on the outlook for 1959 says, "Many important copper consuming industries are predicting an improved volume of business. Passenger car production, for example, is expected to be well in excess of 5 million units." Based on this, and improvement in housing, rebuilding on copper inventories by consumers, the Commerce Dept. predicts a brighter market picture—more supply and more demand, close to balance.

Auto Market — About lead in 1959, Commerce says, "The anticipated increase in automobile production in 1959 . . . is expected to create a moderate increase in lead consumption by the storage battery producers." Since little change is predicted in lead's other major market—tetraethyl for gasoline—the increase of 5 pct predicted is based primarily on battery buying.

"Consumption of zinc is closely related to steel mill operations, automobile production and brass mill operations," says the Commerce forecasters. "On the basis of current forecast of increased automobile production next year, zinc consumption in 1959, for the production of zinc alloys for die casting, is expected to increase about 12 pct over 1958." The call for the entire zinc market is 8 to 10

pct increase in consumption.

Scrap — Also taking advantage of the open season on forecasts, a group of scrap dealers suggests a "fairly steady" copper market during the first two months of 1959.

The Commodity Exchange, Inc., New York futures market, had all kinds of records set in 1958 for metals trading. Increase in activity was 44.78 pct. Yet the Comex expects to top this in 1959.

Nickel

International Nickel workers have voted about 7 to 1 to accept the agreement made by their negotiators and the company. Officially, the strike ends January 2. The company figures that by the end of the month they will be operating efficiently on a 40 hour week.

The 40-hour week is considered significant by some observers. They say that Inco's stocks of nickel must have been depleted more than the company had let on or Inco would have gone back to a 35-hour week.

The consensus is that there must have been some hedge buying during the strike. Many observers say that when all the returns are counted Inco has had one whale of a fourth quarter.

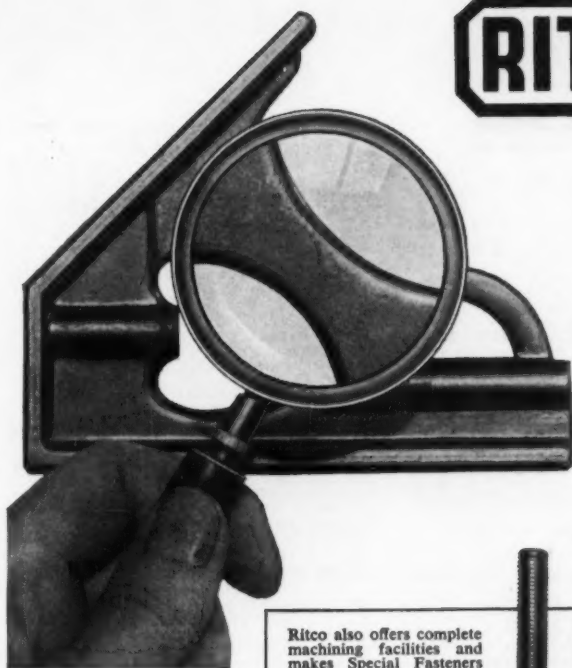
Primary Prices

(cents per lb)	current price	last price	date of change
Aluminum pig	24.70	24.00	8/1/58
Aluminum Ingot	26.80	26.10	8/1/58
Copper (E)	29.00	27.50	10/23/58
Copper (CS)	29.00	29.50	11/26/58
Copper (L)	29.00	27.50	10/23/58
Lead, St. L.	12.80	12.30	10/14/58
Lead, N. Y.	13.00	12.50	10/14/58
Magnesium Ingot	38.00	34.00	8/13/58
Magnesium pig	35.25	33.75	8/13/58
Nickel	74.00	64.50	12/6/58
Titanium sponge	162-182	185-205	11/3/58
Zinc, E. St. L.	11.50	11.00	11/7/58
Zinc, N. Y.	12.00	11.50	11/7/58

ALUMINUM: 99% Ingot fnt allwd. **COPPER:** (E) = electrolytic, (CS) = custom smelters, electrolytic. (L) = lake. **LEAD:** common grade. **MAGNESIUM:** 99.8% pig Velasco, Tex. **NICKEL:** Port Colbourne, Canada. **ZINC:** prime western. Other primary prices, pg. 322.

RITCO FORGINGS

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Screw Machine Products since 1913

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STEEL • BRASS • ALUMINUM



QUALITY DEPENDABILITY EXPERIENCE

NONFERROUS PRICES

MILL PRODUCTS

(Cents per lb unless otherwise noted)

ALUMINUM

(Base 30,000 lb, f.o.b. ship pt., frt. allowed)

Flat Sheet (Mill Finish and Plate)
("F" temper except 6061-0)

Alloy	.032	.081	.136	.250-
			.249	3.
1100, 3003.....	45.7	43.8	42.8	43.3
5052.....	53.1	48.4	46.9	46.0
6061-0.....	50.1	45.7	43.9	44.9

Extruded Solid Shapes

Factor	6063 T-5	6062 T-6
6-8.....	42.7-44.2	51.1-54.8
12-14.....	42.7-44.2	52.0-56.5
24-26.....	43.2-44.7	62.8-67.6
36-38.....	46.7-49.2	86.9-90.6

Screw Machine Stock—2011-T-3

Size"	3/4	3/4-3/4	3/4-1	1 1/4-1 1/4
Price.....	62.0	61.2	59.7	57.3

Roofing Sheet, Corrugated

(Per sheet, 26" wide base, 16,000 lb)

Length"→	72	96	120	144
.019 gage.....	\$1.411	\$1.884	\$2.353	\$2.823
.024 gage.....	1.762	2.349	2.937	3.524

MAGNESIUM

(F.o.b. shipping Pt., carload frt. allowed)

Sheet and Plate

Type→	Gage→	.250	.250-	.188	.081	.032
		3.00	2.00			
AZ31B Stand, Grade.....		67.9	69.0	77.9	108.1	
AZ31B Spec.....		93.3	95.7	108.7	171.3	
Tread Plate.....		70.6	71.7			
Tooling Plate.....		73.0				

Extruded Shapes

Factor→	6-8	12-14	24-26	36-38
Comm. Grade (AZ31C).....	69.6	70.7	76.6	89.2
Spec. Grade... (AZ31B).....	84.6	85.7	90.6	104.2

Alloy Ingot

AZ91B (Die Casting)..... 37.25 (delivered)
AZ63A, AZ92A, AZ91C (Sand Casting) 40.75 (Velmaco, Tex.)

NICKEL, MONEL, INCONEL

(Base prices f.o.b. mill)

"A" Nickel Monel

	Inconel
Sheet, CR	126
Strip, CR	124
Rod, bar, HR.	107
Angles, HR.	107
Flates, HR.	120
Seamless tube .	157
Shot, blocks .	87

COPPER, BRASS, BRONZE

(Freight included in 5000 lbs)

	Sheet	Wire	Rod	Tube
Copper.....	53.13	50.36	53.33	
Brass, Yellow.....	46.57	47.11	46.51	49.98
Brass, Low.....	49.23	49.77	49.17	52.64
Brass, R L.....	50.17	50.71	50.11	53.48
Brass, Naval.....	51.24	45.05	54.65	
Muntz Metal.....	49.35	44.65		
Comm. Br.	51.65	52.19	51.59	54.71
Mang. Br.	54.94	48.64		
Phos. Br. 5%.....	72.52	73.09		
Free Cutting Brass Rod.....				31.22

TITANIUM

(Base prices, f.o.b. mill)

Sheet and strip, commercially pure, \$9.50-\$10.10; alloy, \$15.95; Plate, HR, commercially pure, \$6.00-\$6.75; alloy, \$8.75-\$9.50. Wire, rolled and/or drawn, commercially pure, \$6.50-\$7.00; alloy, \$10.00-\$11.50; Bar, HR or forged, commercially pure, \$5.10-\$5.50; alloy, \$5.10-\$6.35; billets, HR, commercially pure, \$3.80-\$4.35; alloy, \$3.80-\$4.20.

PRIMARY METAL

(Cents per lb unless otherwise noted)

Antimony, American, Laredo, Tex. 29.50
Beryllium aluminum 5% Be, Dollar
per lb contained Be\$74.75
Beryllium copper, per lb cont'd Be \$43.00
Beryllium 97% lump or beads, f.o.b. Cleveland, Reading\$71.50
Bismuth, ton lots\$ 2.25
Cadmium, del'd\$ 1.45
Calcium, 99.9% small lots\$ 4.55
Chromium, 99.8% metallic basis...\$ 1.31
Cobalt, 97-99% (per lb)\$2.00 to \$2.07
Germanium, per gm, f.o.b. Miami, Okla., refined\$35.00 to \$42.00
Gold, U. S. Treas., per troy oz.\$35.00
Iridium, 99.9%, dollars per troy oz. \$ 2.25
Iridium, dollars per troy oz.\$70 to \$80
Lithium, 98%\$11.00 to \$14.00
Magnesium, sticks, 100 to 500 lb... 59.00
Mercury, dollars per 76-lb flask, f.o.b. New York\$220 to \$224
Nickel oxide sinter at Buffalo, N. Y., or other U. S. points of entry, contained nickel 69.60
Palladium, dollars per troy oz.\$15 to \$17
Platinum, dollars per troy oz.\$120.00 to \$125.00
Rhodium\$89.875
Silver ingots (4 per troy oz.)\$43.00
Thorium, per kg.\$ 3.45
Vanadium\$ 5.00
Zirconium sponge\$ 5.00

REMELTED METALS

Brass Ingot

(Cents per lb delivered, carloads)

85-5-5 ingot
No. 115 28.00
No. 120 27.00
No. 122 26.00
80-10-10 ingot
No. 305 32.25
No. 315 30.25
88-10-2 ingot
No. 210 39.75
No. 215 35.50
No. 245 32.25
Yellow ingot
No. 405 23.00
Manganese bronze
No. 421 24.75

Aluminum Ingot

(Cents per lb del'd 30,000 lb and over)

95-5 aluminum-silicon alloys
0.30 copper max.\$24.75-25.00
0.60 copper max.\$24.50-24.75
Piston alloys (No. 122 type).....\$24.25-25.25
No. 12 alum. (No. 2 grade).....\$21.50-22.00
108 alloy\$22.00-22.50
195 alloy\$25.00-26.00
13 alloy (0.60 copper max.).....\$24.25-24.75
AXS-679 (1 pct zinc)\$21.75-22.25

(Effective Dec. 24, 1955)

Steel deoxidizing aluminum notch bar granulated or shot

Grade 1—95-97 1/2%22.50-23.50
Grade 2—92-95%21.25-22.25
Grade 3—90-92%20.25-21.25
Grade 4—85-90%17.50-18.50

SCRAP METALS

Brass Mill Scrap

(Cents per pound, add 1¢ per lb for shipments of 20,000 lb and over)

	Heavy	Turnings
Copper	25	24 1/4
Yellow brass	19	17 1/4
Red brass	22 1/2	21 1/4
Comm. bronze	22 1/2	22 1/4
Mang. bronze	17 1/2	16 1/2
Free cutting rod ends.	18 1/2	

Customs Smelters Scrap

(Cents per pound carload lots, delivered to refinery)

No. 1 copper wire 24 1/4
No. 2 copper wire 23
Light copper 21
*Refinery brass 23
Copper bearing material 21 1/2
*Dry copper content.

Ingot Makers Scrap

(Cents per pound carload lots, delivered to refinery)

No. 1 copper wire 24 1/2
No. 2 copper wire 23
Light copper 21
No. 1 composition 19
No. 1 comp. turnings 18 1/4
Hvy. yellow brass solids 14 1/4
Brass pipe 15 1/4
Radiators 15 1/2

Aluminum

Mixed old cast. 12 —13
Mixed new clips 15 —16
Mixed turnings, dry 13 —14

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Copper and Brass

No. 1 copper wire 21 1/2—22
No. 2 copper wire 19 1/2—20
Light copper 17 1/2—18
Auto radiators (unsweated)..... 13 1/2—13 3/4
No. 1 composition 16 1/2—17
No. 1 composition turnings..... 15 1/2—16
Cocks and faucets 13 1/2—14
Clean heavy yellow brass 11 1/2—12 1/2
Brass pipe 13 1/2—14
New soft brass clippings 14 —14 1/2
No. 1 brass rod turnings 11 1/2—12

Aluminum

Alum. pistons and struts 6 —6 1/2
Aluminum crankcases 10 —10 1/2
1100 (2S) aluminum clippings 13 —13 1/2
Old sheet and turnings 10 —10 1/2
Brass and turnings 6 1/2 —7
Industrial castings 10 —10 1/2
2020 (24S) clippings 11 1/2—11 3/4

Zinc

New zinc clippings 4 1/2—5 1/4
Old zinc 3 1/2—3 3/4
Zinc routings 2 1/2—2 3/4
Old die cast scrap 2 —2 1/4

Nickel and Monel

Pure nickel clippings 52-54
Clean nickel turnings 37-40
Nickel anodes 52-54
Nickel rod ends 52-54
New Monel clippings 30-32
Clean Monel turnings 30-32
Old sheet Monel 26-28
Nickel silver clippings, mixed 15
Nickel silver turnings, mixed 15

Lead

Soft scrap lead 8 —8 1/4
Battery plates (dry) 3 1/2—3
Batteries, acid free 2 1/2—2 3/4

Miscellaneous

Block tin 75 —76
No. 1 pewter 59 —60
Auto babbitt 39 —40
Mixer common babbitt 9 1/2—10
Solder joints 13 1/2—13 3/4
Siphon tops 42
Small foundry type 10 1/2—10 3/4
Monotype 10 1/2—10 3/4
Lino. and stereotype 9 1/2—9 3/4
Electrotype 8 1/2—8 3/4
Hand picked type shells 6 1/2—7
Lino. and stereo. dross 2 1/2—3
Electro dross 2 1/2—2 3/4



what's Volco doing here?

When the baby cries and it's time for a change, it's VOLCO to the rescue. And, whether it's pins to hold the diaper, rivets or screws to fasten less tender objects, VOLCO wire does the job expertly.

For here, at VOLCO, you might say we "baby" our product. Whether we're supplying wire for safety pins or cotter pins, we exercise a special kind of

VOLCO care. Our reputation is only as good as your final product. And, we are determined that every pound of product that bears your name reflects the care and skill developed through our years of experience. That experience is available to you...for help with specifications and advice for your job. So, come to VOLCO, and remember...VOLCO is the supplier that is not your competitor!



VOLCO

BRASS AND COPPER CO.

BRASS • COPPER • BRONZE • NICKEL SILVER • WIRE • ROD • SHEET

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Branches: Chicago • Philadelphia • Cleveland • Providence • Hartford

©1956 VOLCO BRASS AND COPPER CO.

IRON AGE

STEEL
PRICES

Italics identify producers listed in key at end of table. Base prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.

	BILLETS, BLOOMS, SLABS			PIL- ING	SHAPES STRUCTURALS			STRIP					
	Carbon Rerolling Net Ton	Carbon Forging Net Ton	Alloy Net Ton		Carbon	Hi Str. Low Alloy	Carbon Wide- Flange	Hot- rolled	Cold- rolled	Hi Str. H.R. Low Alloy	Hi Str. C.R. Low Alloy	Alloy Hot- rolled	Alloy Cold- rolled
EAST	Bethlehem, Pa.		\$119.00 B3		5.55 B3	8.10 B3	5.55 B5						
	Buffalo, N. Y.	\$88.00 R3, B3	\$99.50 R3, B3	\$119.00 R3, B3	6.50 B3	5.55 B3	8.10 B3	5.55 B3	5.10 B3, R3	7.425 S10, R7	7.575 B3		
	Phila., Pa.								7.875 P15				
	Harrison, N. J.												15.55 C11
	Conschocken, Pa.		\$104.50 A2	\$126.00 A2				5.15 A2		7.575 A2			
	New Bedford, Mass.								7.875 R6				
	Johnstown, Pa.	\$80.00 B3	\$99.50 B3	\$119.00 B3		5.55 B3	8.10 B3						
	Boston, Mass.								7.975 T8				
	New Haven, Conn.								7.875 D1				
	Baltimore, Md.								7.425 T8				15.90 T8
	Phoenixville, Pa.				5.55 P2		5.55 P2						
	Sparrows Pt., Md.							5.10 B3		7.575 B3			
	New Britain, Bridgeport, Wallingford, Conn.			\$119.00 N8					7.875 W1,S7				
MIDDLE WEST	Pawtucket, R. I. Worcester, Mass.								7.975 N7, A5				15.90 N7 15.70 T8
	Alton, Ill.							5.30 L1					
	Ashland, Ky.							5.10 A7		7.575 A7			
	Canton-Massillon, Dover, Ohio		\$102.00 R3	\$119.00 R3, \$114.00 T5					7.425 G4		10.80 G4		
	Chicago, Ill. Franklin Park, Ill. Evanston, Ill.	\$80.00 U1, R3	\$99.50 U1, R3,W8	\$119.00 U1, R3,W8	6.50 U1	5.50 U1, W8,P13	8.05 U1, Y1,W8	5.50 U1	5.10 W8, N4,A1	7.525 A1,T8, M8	7.575 W8	8.40 W8, S9,I3	15.55 A1, S9,G4,T8
	Cleveland, Ohio								7.425 A5,J3		10.75 A5	8.40 J3	
	Detroit, Mich.			\$119.00 R5				5.10 G3, M2	7.425 M2, S1, D1,P11	7.575 G3	10.80 S1		
	Anderson, Ind.								7.425 G4				
	Gary, Ind. Harbor, Indiana	\$80.00 U1	\$99.50 U1	\$119.00 U1, Y1		5.50 U1, J3	8.05 U1, J3	5.50 J3	5.10 U1, I3,Y1	7.425 Y1	7.575 U1, I3,Y1	10.90 Y1	8.40 U1, Y1
	Sterling, Ill.	\$80.00 N4				5.50 N4		5.20 N4					
	Indianapolis, Ind.								7.575 R5				15.70 R5
	Newport, Ky.							5.10 A9				8.40 A9	
	Niles, Warren, Ohio Sharon, Pa.		\$99.50 S1, C10	\$119.00 C10,S1				5.10 R3, S1	7.425 R3, T4,S1	7.575 R3, S1	10.90 R3, S1	8.40 S1	15.55 S1
WEST	Owensboro, Ky.	\$80.00 G5	\$99.50 G5	\$119.00 G5									
	Pittsburgh, Midland, Butler, Aliquippa, McKeesport, Pa.	\$80.00 U1, P6	\$99.50 U1, C11,P6	\$119.00 U1, C11,B7	6.50 U1	5.50 U1, J3	8.05 U1, J3	5.50 U1	5.10 P6	7.425 J3,B4 7.525 E3		8.40 S9	15.55 S9
	Weirton, Wheeling, Fellansbee, W. Va.				6.50 U1, W3	5.50 W3		5.50 W3	5.10 W3	7.425 F3	7.575 W3	10.90 W3	
	Youngstown, Ohio	\$80.00 R3	\$99.50 Y1, C10	\$119.00 Y1			8.05 Y1		5.10 U1	7.425 Y1,R5	7.575 U1, Y1	10.95 Y1	8.40 U1, Y1
	Fontana, Cal.	\$90.50 K1	\$109.00 K1	\$140.00 K1		6.30 K1	8.85 K1	6.45 K1	5.825 K1	9.20 K1			
	Geneva, Utah		\$99.50 C7			5.50 C7	8.05 C7						
	Kansas City, Mo.					5.60 S2	8.15 S2					8.65 S2	
	Los Angeles, Torrance, Cal.		\$109.00 B2	\$139.00 B2		6.20 C7, B2	8.75 B2		5.85 C7, B2	9.30 C1,R5		9.60 B2	17.75 J3
	Minnequa, Colo.					5.90 C6			6.20 C6	9.375 C6			
	Portland, Ore.					6.25 O2							
	San Francisco, Niles, Pittsburg, Cal.		\$109.00 B2			6.15 B2	8.70 B2		5.85 C7, B2				
	Seattle, Wash.		\$113.00 B2			6.25 B2	8.80 B2		6.10 B2				
	Atlanta, Ga.					5.70 A8			5.10 A8				
SOUTH	Fairfield, Ala. City, Birmingham, Ala.	\$80.00 T2	\$99.50 T2			5.50 T2 R3,C16	8.05 T2		5.10 T2, R3,C16	7.575 T2			
	Houston, Lone Star, Texas		\$104.50 S2	\$124.00 S2		5.60 S2	8.15 S2					8.65 S2	

(Effective Dec. 24, 1958)

IRON AGE

Italics identify producers listed in key at end of table. Base prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.

STEEL
PRICES

SHEETS

WIRE
ROD

TINPLATE†

Cokes*
1.25-lb.
base box

Electro**
0.25-lb.
base box

Holloware
Enameling
29 ga.

	Hot-rolled 18 ga. & hyvr.	Cold- rolled	Galvanized (Hot-dipped)	Enamel- ing	Long Tone	Hi Str. Low Alloy H.R.	Hi Str. Low Alloy C.R.	Hi Str. Low Alloy Galv.			
EAST	Buffalo, N. Y.	5.10 B3	6.275 B3			7.525 B3	9.275 B3		6.40 W6	† Special coated mlg. terne deduct 50¢ from 1.25-lb. coke base box price. Can-making quality BLACKPLATE 55 to 128 lb. deduct \$2.20 from 1.25 lb. coke base box. * COKE: 1.50-lb. add 25¢. **ELECTRO: 0.50-lb. add 25¢; 0.75-lb. add 65¢; 1.00-lb. add \$1.00. Differ- ential 1.00 lb./0.25 lb. add 65¢.	
	Claymont, Del.										
	Costesville, Pa.										
	Conshohocken, Pa.	5.15 A2	6.325 A2			7.575 A2					
	Harrisburg, Pa.										
	Hartford, Conn.										
	Johnstown, Pa.								6.40 B3		
	Fairless, Pa.	5.15 U1	6.325 U1			7.575 U1	9.325 U1				
	New Haven, Conn.										
	Phoenixville, Pa.										
MIDDLE WEST	Sparrows Pt., Md.	5.10 B3	6.275 B3	6.875 B3		7.525 B3	9.275 B3	10.025 B3	6.50 B3	\$10.40 B3	\$91.0 B3
	Worcester, Mass.								6.70 A5		
	Trenton, N. J.										
	Alton, Ill.								6.60 L1		
	Ashland, Ky.	5.10 A7		6.875 A7	6.775 A7	7.525 A7					
	Canton-Massillon, Dover, Ohio			6.875 R1, R3							
	Chicago, Joliet, Ill.	5.10 W8, A1				7.525 U1, W8			6.40 A5, R1,W8		
	Sterling, Ill.								6.50 N4, K2		
	Cleveland, Ohio	5.10 R3, J3	6.275 R3, J3	7.65 R3*	6.775 R3	7.525 R3, J3	9.275 R3, J3		6.40 A5		
	Detroit, Mich.	5.10 G3, M2	6.275 G3, M2			7.525 G3	9.275 G3				
	Newport, Ky.	5.10 A1	6.275 A1								
	Gary, Ind. Harbor, Indiana	5.10 U1, I3,Y1	6.275 U1, I3,Y1	6.875 U1, I3	6.775 U1, I3,Y1	7.225 U1	7.525 U1, Y1,I3	9.275 U1, Y1	6.40 Y1	\$10.40 U1, Y1	\$9.10 I3, U1,Y1
	Granite City, Ill.	5.20 G2	6.375 G2	6.975 G2	6.875 G2						\$9.20 G2
	Kokomo, Ind.			6.975 C9					6.50 C9		
	Mansfield, Ohio	5.10 E2	6.275 E2			7.215 E2					
	Middletown, Ohio		6.275 A7	6.875 A7	6.775 A7	7.225 A7					
	Niles, Warren, Ohio Sharon, Pa.	5.10 R3, S1	6.275 R3	6.875 R3 7.65 R3*	6.775 S1	7.225 S1*, R3	7.525 R3, S1	9.275 R3,			\$9.10 R3
	Pittsburgh, Midland, Butler, Donora, Aliquippa, McKeesport, Pa.	5.10 U1, J3,P6	6.275 U1, J3,P6	6.875 U1, J3 7.50 E3*	6.775 U1	7.525 U1, J3	9.275 U1, J3	10.025 U1, J3	6.40 A5, J3,P6	\$10.40 W5, J3	\$9.10 U1, J3
	Portsmouth, Ohio	5.10 P7	6.275 P7						6.40 P7		
	Weirton, Wheeling, Fellansbee, W. Va.	5.10 W3, W3	6.275 W3, F3,W5	6.875 W3, W5 7.50 W3*		7.225 W3, W3	7.525 W3	9.275 W3		\$10.40 W5, W3	\$9.10 W5, W3
	Youngstown, Ohio	5.10 U1, Y1	6.275 Y1	7.50 J3*	6.775 Y1	7.525 Y1	9.275 Y1		6.40 Y1		
WEST	Fontana, Cal.	5.825 K1	7.40 K1			8.25 K1	10.40 K1			\$11.05 K1	\$9.75 K1
	Geneva, Utah	5.20 C7									
	Kansas City, Mo.								6.65 S2		
	Los Angeles, Torrance, Cal.								7.20 B2		
	Minnequa, Colo.								6.65 C6		
	San Francisco, Niles, Pittsburg, Cal.	5.80 C7	7.225 C7	7.625 C7					7.20 C7	\$11.05 C7	\$9.75 C7
SOUTH	Atlanta, Ga.										
	Fairfield, Ala. Alabama City, Ala.	5.10 T2, R3	6.275 T2, R3	6.875 T2, R3	6.775 T2				6.40 T2,R3	\$10.50 T2	\$9.20 T2
	Houston, Texas								6.65 S2		

*Electroalvanized sheets.

(Effective Dec. 24, 1958)

*7.425 at Sharon-Niles is 7.225

IRON AGE		Italics identify producers listed in key at end of table. Base prices, f.o.b. mill, in cents per lb., unless otherwise noted. Extras apply.										
STEEL PRICES		BARS						PLATES				WIRE
		Carbon† Steel	Reinforc- ing	Cold Finished	Alloy Hot- rolled	Alloy Cold Drawn	Hi Str. H.R. Low Alloy	Carbon Steel	Floor Plate	Alloy	Hi Str. Low Alloy	Mfr's. Bright
EAST	Bethlehem, Pa.				6.725 B3	9.825 B3	8.30 B3					
	Buffalo, N. Y.	5.675 R3,B3	5.675 R3,B3	7.70 B5	6.725 B3,R3	9.825 B3,B5	8.30 B3	5.30 B3				8.00 W6
	Claymont, Del.							5.30 C4		7.50 C4	7.95 C4	
	Coatesville, Pa.							5.30 L4		7.50 L4	7.95 L4	
	Conshohocken, Pa.							5.30 A2	6.375 A2	7.50 A2	7.95 A2	
	Harrisburg, Pa.							5.30 P2	6.475 P2			
	Milton, Pa.	5.825 M7	5.825 M7									
	Hartford, Conn.			8.15 R3		9.325 R3						
	Johnstown, Pa.	5.675 B3	5.675 B3		6.725 B3		8.30 B3	5.30 B3		7.50 B3	7.95 B3	8.00 B3
	Fairless, Pa.	5.825 U1	5.825 U1		6.875 U1							
	Newark, Camden, N. J.			8.10 W10, P10		9.20 W10, P10						
	Bridgeport, Putnam, Williamstn., Conn.			8.20 W10 8.15 J3	6.80 N8	9.175 N8						
	Sparrows Pt., Md.		5.675 B3					5.30 B3		7.50 B3	7.95 B3	8.10 B3
	Palmer, Worcester, Readville, Mansfield, Mass.			8.20 B5, C14		9.325 A5,B5						8.30 A5, W6
Spring City, Pa.			8.10 K4		9.20 K4							
MIDDLE WEST	Alton, Ill.	5.875 L1										8.20 L1
	Ashland,Newport,Ky.							5.30 A7,A9		7.50 A9	7.95 A7	
	Canton, Massillon, Mansfield, Ohio	6.15° R3		7.65 R3,R2	6.725 R3 6.475 T5	9.025 R3,R2 8.775 T5		5.30 E2				
	Chicago, Joliet, Waukegan, Madison,Harvey,Ill.	5.675 U1,R3, W8,N4,P13	5.675 U1,R3, N4,P13,W8 5.875L1	7.65 A5, W10,W8, B5,L2,N9	6.725 U1,R3, W8	9.025 A5, W10,W8, L2,N8,B5	8.30 U1,W8, R3	5.30 U1,A1, W8,I3	6.375 U1	7.50 U1, W8	7.95 U1, W8	8.00 A5,R3, W8,N4, K2,W7
	Cleveland, Ohio Elyria, Ohio	5.675 R3	5.675 R3	7.65 A5,C13, C18		9.025 A5, C13,C18	8.30 R3	5.30 R3,J3	6.375 J3		7.95 R3,J3	8.00 A5, C13,C18
	Detroit, Mich.	5.675 G3	5.675 G3	7.90 P3 7.85 P8,B5 7.65 R5	6.725 R5,G3	9.025 R5 9.225 B5,P3, P8	8.30 G3	5.30 G3		7.50 G3	7.95 G3	
	Duluth, Minn.											8.00 A5
	Gary, Ind. Harbor, Crawfordsville, Hammond, Ind.	5.675 U1,I3, Y1	5.675 U1,I3, Y1	7.65 R3,J3	6.725 U1,I3, Y1	9.025 R3,M4	8.30 U1,Y1	5.30 U1,I3, Y1	6.375 J3, I1	7.50 U1, Y1	7.95 U1, Y1,I3	8.10 M4
	Granite City, Ill.							5.40 G2				
	Kokomo, Ind.		5.775 C9									8.10 C9
	Sterling, Ill.	5.775 N4	5.775 N4					5.30 N4				8.10 K2
	Niles, Warren, Ohio Sharon, Pa.			7.65 C10	6.725 C10	9.025 C10		5.30 R3,S1		7.50 S1	7.95 R3, S1	
	Owensboro, Ky.	5.675 G5			6.725 G5							
	Pittsburgh, Midland, Donora, Aliquippa, Pa.	5.675 U1,J3	5.675 U1,J3	7.65 A5,B4, R3,J3,C11, W10,S9,C8, M9	6.725 U1,J3, C11,B7	9.025 A5, W10,R3,S9, C11,C8,M9	8.30 U1,J3	5.30 U1,J3	6.375 U1,J3	7.50 U1, J3,B7	7.95 U1, J3,B7	8.00 A5, J3,P6
Portsmouth, Ohio											8.00 P7	
Weirton, Wheeling, Follinsbee, W. Va.							5.30 W5					
Youngstown, Ohio	5.675 U1,R3, Y1	5.675 U1,R3, Y1	7.65 A1,Y1, F2	6.725 U1,Y1	9.025 Y1,F2	8.30 U1,Y1	5.30 U1, R3,Y1		7.50 Y1	7.95 U1,Y1	8.00 Y1	
WEST	Emeryville, Cal.	6.425 J5	6.425 J5		7.775 K1		9.00 K1	6.10 K1		8.30 K1	8.75 K1	
	Fontana, Cal.	6.375 K1	6.375 K1									
	Geneva, Utah							5.30 C7			7.95 C7	
	Kansas City, Mo.	5.925 S2	5.925 S2		6.975 S2		8.55 S2					8.25 S2
	Los Angeles, Torrance, Cal.	6.375 C7,B2	6.375 C7,B2	9.10 R3,P14, S12	7.775 B2	11.00 P14, S12	8.625 B2					8.95 B2
	Minnequa, Colo.	6.125 C6	6.125 C6					6.15 C6				8.25 C6
	Portland, Ore.	6.425 O2	6.425 O2									
	San Francisco, Niles, Pittsburg, Cal.	6.375 C7 6.425 B2	6.375 C7 6.425 B2				8.675 B2					8.95 C7,C6
Seattle, Wash.	6.425 B2,N6	6.425 B2				8.675 B2	6.20 B2		8.40 B2	8.85 B2		
SOUTH	Atlanta, Ga.	5.875 A8	5.675 A8									8.00 A8
	Fairfield City, Ala. Birmingham, Ala.	5.675 T2,R3, C16	5.675 T2,R3, C16	8.25 C16			8.30 T2	5.30 T2,R3			7.95 T2	8.00 T2,R3
	Houston, Ft. Worth, Lone Star, Texas	5.925 S2	5.925 S2		6.975 S2		8.55 S2	5.40 S2		7.60 S2	8.05 S2	8.25 S2

STEEL PRICES

Key to Steel Producers

With Principal Offices

- A1 Acme Steel Co., Chicago
A2 Alan Wood Steel Co., Conshohocken, Pa.
A3 Allegheny Ludlum Steel Corp., Pittsburgh
A4 American Cladmetals Co., Carnegie, Pa.
A5 American Steel & Wire Div., Cleveland
A6 Angel Nail & Chaplet Co., Cleveland
A7 Armco Steel Corp., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A9 Acme-Newport Steel Co., Newport, Ky.
B1 Babcock & Wilcox Tube Div., Beaver Falls, Pa.
B2 Bethlehem Pacific Coast Steel Corp., San Francisco
B3 Bethlehem Steel Co., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B5 Bliss & Laughlin, Inc., Harvey, Ill.
B6 Brook Plant, Wickwire-Spencer Steel Div., Birdsboro, Pa.
B7 A. M. Byers, Pittsburgh
B8 Braeburn Alloy Steel Corp., Braeburn, Pa.
C1 Calstrip Steel Corp., Los Angeles
C2 Carpenter Steel Co., Reading, Pa.
C4 Claymont Products Dept., Claymont, Del.
C6 Colorado Fuel & Iron Corp., Denver
C7 Columbia Geneva Steel Div., San Francisco
C8 Columbia Steel & Shifting Co., Pittsburgh
C9 Continental Steel Corp., Kokomo, Ind.
C10 Copperweld Steel Co., Pittsburgh, Pa.
C11 Crucible Steel Co. of America, Pittsburgh
C13 Cuyahoga Steel & Wire Co., Cleveland
C14 Compressed Steel Shifting Co., Readville, Mass.
C15 G. O. Carlson, Inc., Thorndale, Pa.
C16 Connors Steel Div., Birmingham
C18 Cold Drawn Steel Plant, Western Automatic Machine Screw Co., Elyria, O.
D1 Detroit Steel Corp., Detroit
D3 Driver Harris Co., Harrison, N. J.
D4 Dickson Weatherproof Nail Co., Evanston, Ill.
E1 Eastern Stainless Steel Corp., Baltimore
E2 Empire-Reeves Steel Corp., Mansfield, O.
E3 Enamel Products & Plating Co., McKeesport, Pa.
F1 Fifth Sterling, Inc., McKeesport, Pa.
F2 Fitzsimons Steel Corp., Youngstown
F3 Follansbee Steel Corp., Follansbee, W. Va.

- G2 Granite City Steel Co., Granite City, Ill.
G3 Great Lakes Steel Corp., Detroit
G4 Greer Steel Co., Dover, O.
G5 Green River Steel Corp., Owenboro, Ky.
H1 Hanna Furnace Corp., Detroit
H2 Ingersoll Steel Div., Chicago
H3 Inland Steel Co., Chicago
H4 Interlake Iron Corp., Cleveland
J1 Jackson Iron & Steel Co., Jackson, O.
J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.
K1 Kaiser Steel Corp., Fontana, Calif.
K2 Keystone Steel & Wire Co., Peoria
K3 Koppers Co., Granite City, Ill.
K4 Keystone Drawn Steel Co., Spring City, Pa.
L1 Laclede Steel Co., St. Louis
L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens Steel Co., Coatesville, Pa.
M1 Mahoning Valley Steel Co., Niles, O.
M2 McLouth Steel Corp., Detroit
M3 Mercer Tube & Mfg. Co., Sharon, Pa.
M4 Mid States Steel & Wire Co., Crawfordsville, Ind.
M6 Mystic Iron Works, Everett, Mass.
M7 Milton Steel Products Div., Milton, Pa.
M8 Mill Strip Products Co., Evanston, Ill.
M9 Moltrup Steel Products Co., Beaver Falls, Pa.
N1 National Supply Co., Pittsburgh
N2 National Tube Div., Pittsburgh
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N6 Northwest Steel Rolling Mills, Seattle
N7 Newman Crosby Steel Co., Pawtucket, R. I.
N8 Carpenter Steel of New England, Inc., Bridgeport, Conn.
N9 Nelson Steel & Wire Co.
O1 Oliver Iron & Steel Co., Pittsburgh
O2 Oregon Steel Mills, Portland
P1 Page Steel & Wire Div., Monessen, Pa.
P2 Phoenix Iron & Steel Co., Phoenixville, Pa.
P3 Pilgrim Drawn Steel Div., Plymouth, Mich.
P4 Pittsburgh Coke & Chemical Co., Pittsburgh
P5 Pittsburgh Screw & Bolt Co., Pittsburgh
P6 Pittsburgh Steel Co., Pittsburgh
P7 Portsmouth Div., Detroit Steel Corp., Detroit

- P8 Plymouth Steel Co., Detroit
P9 Pacific States Steel Co., Niles, Cal.
P10 Precision Drawn Steel Co., Camden, N. J.
P11 Production Steel Strip Corp., Detroit
P13 Phoenix Mfg. Co., Joliet, Ill.
P14 Pacific Tube Co.
P15 Philadelphia Steel and Wire Corp.
R2 Reliance Div., Eaton Mfg. Co., Massillon, O.
R3 Republic Steel Corp., Cleveland
R4 Roebbing Sons Co., John A., Trenton, N. J.
R5 Jones & Laughlin Steel Corp., Stainless and Strip Div.
R6 Rodney Metals, Inc., New Bedford, Mass.
R7 Rome Strip Steel Co., Rome, N. Y.
S1 Sharon Steel Corp., Sharon, Pa.
S2 Sheffield Steel Div., Kansas City
S3 Shenango Furnace Co., Pittsburgh
S4 Simonds Saw and Steel Co., Fitchburg, Mass.
S5 Sweet's Steel Co., Williamsport, Pa.
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S9 Superior Steel Div. of Copperweld Steel Co., Carnegie, Pa.
S10 Seneca Steel Service, Buffalo
S11 Southern Electric Steel Co., Birmingham
S12 Sierra Drawn Steel Corp., Los Angeles, Calif.
T1 Tonawanda Iron Div., N. Tonawanda, N. Y.
T2 Tennessee Coal & Iron Div., Fairfield
T3 Tennessee Products & Chem. Corp., Nashville
T4 Thomas Strip Div., Warren, O.
T5 Tunkin Steel & Tube Div., Canton, O.
T7 Texas Steel Co., Fort Worth
T8 Thompson Wire Co., Boston
U1 United States Steel Corp., Pittsburgh
U2 Universal-Cyclops Steel Corp., Bridgeville, Pa.
U3 Ulbrich Stainless Steels, Wallingford, Conn.
U4 U. S. Pipe & Foundry Co., Birmingham
W1 Wallingford Steel Co., Wallingford, Conn.
W2 Washington Steel Corp., Washington, Pa.
W3 Weirton Steel Co., Weirton, W. Va.
W4 Wheatland Tube Co., Wheatland, Pa.
W5 Wheeling Steel Corp., Wheeling, W. Va.
W6 Wickwire Spencer Steel Div., Buffalo
W7 Wilson Steel & Wire Co., Chicago
W8 Wisconsin Steel Div., S. Chicago, Ill.
W9 Woodward Iron Co., Woodward, Ala.
W10 Wyckoff Steel Co., Pittsburgh
W12 Wallace Barnes Steel Div., Bristol, Conn.
Y1 Youngstown Sheet & Tube Co., Youngstown, O.

PIPE AND TUBING

Base discounts (per) l.o.b. mills. Base price about \$200 per net ton.

STANDARD T. & C.	BUTTWELD												SEAMLESS											
	1/2 in.		3/4 in.		1 in.		1 1/4 in.		1 1/2 in.		2 in.		2 1/2-3 in.		2 in.		2 1/2 in.		3 in.		3 1/2-4 in.			
	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.	Bk.	Gal.
Sparrows Pt. B3.....	0.25	*15.0	3.25	*11.0	6.75	*6.50	9.25	*5.75	9.75	*4.75	10.25	*4.25	11.75	*4.50										
Youngstown R3.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*2.75	11.75	*2.75	12.25	*2.25	13.75	*2.50										
Fontana K1.....	*10.75	*26.00	*7.75	*22.00	*4.25	*17.50	*1.75	*16.75	*1.25	*15.75	*0.75	*15.25	0.75	*15.50										
Pittsburgh J3.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50	*12.25	*27.25	*5.75	*22.50	*3.25	*20.0	*1.75	*18.50		
Alton, Ill. L1.....	0.25	*15.0	3.25	*11.0	6.75	*6.50	9.25	*5.75	9.75	*4.75	10.25	*4.25	11.75	*4.50										
Sharon M3.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50										
Fairless N2.....	0.25	*15.0	3.25	*11.0	6.75	*6.50	9.25	*5.75	9.75	*4.75	10.25	*4.25	11.75	*4.50										
Pittsburgh N1.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50	*12.25	*27.25	*5.75	*22.50	*3.25	*20.0	*1.75	*18.50		
Wheeling W5.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50										
Wheatland W4.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50										
Youngstown Y1.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50	*12.25	*27.25	*5.75	*22.50	*3.25	*20.0	*1.75	*18.50		
Indiana Harbor Y1.....	1.25	*14.0	4.25	*10.0	7.75	*5.50	10.25	*4.75	10.75	*3.75	11.25	*3.25	12.75	*3.50										
Lorain N2.....	2.25	*13.0	5.25	*9.0	8.75	*4.50	11.25	*3.75	11.75	*2.75	12.25	*2.25	13.75	*2.50	*12.25	*27.25	*5.75	*22.50	*3.25	*20.0	*1.75	*18.50		
EXTRA STRONG PLAIN ENDS																								
Sparrows Pt. B3.....	4.75	*9.0	8.75	*5.0	11.75	*0.50	12.25	*1.75	12.75	*0.75	13.25	*0.25	13.75	*1.50										
Youngstown R3.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50										
Fairless N2.....	4.75	*9.0	8.75	*5.0	11.75	*0.50	12.25	*1.75	12.75	*0.75	13.25	*0.25	13.75	*1.50										
Fontana K1.....	*6.25						1.25		1.75		2.25		2.75											
Pittsburgh J3.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50	*10.75	*24.75	*3.25	*19.0	*0.75	*16.50	4.25	*11.50		
Alton, Ill. L1.....	4.75	*9.0	8.75	*5.0	11.75	*0.50	12.25	*1.75	12.75	*0.75	13.25	*0.25	13.75	*1.50										
Sharon M3.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50										
Pittsburgh N1.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50	*10.75	*24.75	*3.25	*19.0	*0.75	*16.50	4.25	*11.50		
Wheeling W5.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50										
Wheatland W4.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50										
Youngstown Y1.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50	*10.75	*24.75	*3.25	*19.0	*0.75	*16.50	4.25	*11.50		
Indiana Harbor Y1.....	5.75	*8.0	9.75	*4.0	12.75	0.50	13.25	*0.75	13.75	0.25	14.25	0.75	14.75	*0.50										
Lorain N2.....	6.75	*7.0	10.75	*3.0	13.75	1.50	14.25	0.25	14.75	1.25	15.25	1.75	15.75	0.50	*10.75	*24.75	*3.25	*19.0	*0.75	*16.50	4.25	*11.50		

Threads only, butt-welded and seamless, 2 1/2 pt. higher discount. Plain ends, butt-welded and seamless, 3-in. and under, 5 1/2 pt. higher discount.
Galvanized discounts based on zinc price range of over 9¢ to 11¢ per lb. East St. Louis. For each 2¢ change in zinc, discounts vary as follows: 1/2, 3/4 and 1-in., 2 pt.; 1 1/4, 1 1/2 and 2-in., 1 1/2 pt.; 2 1/2 and 3-in., 1 pt., e.g., zinc price range of over 13¢ to 15¢ would lower discounts on 2 1/2 and 3-in. pipe by 2 points; zinc price in range over 7¢ to 9¢ would increase discounts. East St. Louis zinc price now 11.50¢ per lb.

(Effective Dec. 24, 1958)

TOOL STEEL

F.o.b. mill	W	Cr	V	Mo	Co	per lb	SAE
18	4	1	—	—	—	\$1.84	T-1
18	4	1	—	—	5	2.545	T-4
18	4	2	—	—	—	2.005	T-2
1.5	4	1.5	8	—	—	1.20	M-1
6	4	3	6	—	—	1.59	M-3
6	4	2	5	—	—	1.345	M-2
High-carbon chromium..						.955	D-3, D-5
Oil hardened manganese						.505	O-2
Special carbon .....						.38	W-1
Extra carbon .....						.38	W-1
Regular carbon .....						.325	W-1

Warehouse prices on and east of Mississippi are 4¢ per lb higher. West of Mississippi, 1¢ higher.

CLAD STEEL

Base prices, cents per lb f.o.b.

Cladding	Plate (L4, C4, A3, J2)			Sheet (J2)
	10 pct	15 pct	20 pct	
302				37.50
304	28.80	31.55	34.30	40.00
316	42.20	46.25	50.25	58.75
321	34.50	37.75	41.05	47.25
347	40.60	44.65	48.55	57.00
405	24.60	26.90	29.25	
410	22.70	24.85	27.00	
430	23.45	25.65	27.90	

CR Strip (S9) Copper, 10 pct, 2 sides, 38.75; 1 side, 33.10.

RAILS, TRACK SUPPLIES

F.o.b. Mill Cents Per Lb	No. 1 Std. Rail	Light Rail	Joint Bars	Track Spikes	Tie Plates	Track Bolts Unthreaded
Beasmer U1	5.75	6.725	7.25			15.35
Cleveland R3				10.10		
Sa. Chicago R3						
Ensley T2	5.75	6.725		10.10	6.875	
Fairfield T2		6.725			6.875	
Gary U1	5.75					
Huntington C76		6.50				
Ind. Harbor J3				10.10		
Johnstown B3		6.725	7.25			
Joliet U1				10.10		
Kansas City S2						15.35
Lackawanna B3	5.75	6.725	7.25	10.10	6.875	15.35
Lebanon B3		7.25				15.35
Minneapolis C6	5.75	7.225	7.25	10.10	6.875	15.35
Pittsburgh P5						14.75
Seattle B2				10.10		
Steelton B3	5.75		7.25		6.875	15.85
Struthers Y1				10.10		
Terrance C7					6.75	
Williamsport S5		6.50				
Youngstown R3				10.10		

COKE

Furnace, beehive (f.o.b.)	Net-Ton
Connellsville, Pa.	\$14.50
Foundry, beehive (f.o.b.)	\$18.00 to \$18.50
Foundry oven coke	
Buffalo, del'd	\$31.75
Detroit, f.o.b.	30.50
New England, del'd	31.55
Kearney, N. J., f.o.b.	29.75
Philadelphia, f.o.b.	29.50
Swedeland, Pa., f.o.b.	29.50
Painesville, Ohio, f.o.b.	30.50
Erie, Pa., f.o.b.	30.50
Cleveland, del'd	32.65
Cincinnati, del'd	31.84
St. Paul, f.o.b.	29.75
St. Louis, f.o.b.	31.50
Birmingham, f.o.b.	28.85
Milwaukee, f.o.b.	30.50
Neville, Is., Pa.	29.25

LAKE SUPERIOR ORES

51.50% Fe natural content, delivered lower Lake ports. Prices for 1958 season. Freight changes for seller's account.	
Gross Ton	
Openhearth lump	\$12.70
Old range, bessemer	11.85
Old range, nonbessemer	11.70
Mesabi, bessemer	11.60
Mesabi, nonbessemer	11.45
High phosphorus	11.45

ELECTRICAL SHEETS

22-Gage F.o.b. Mill Cents Per Lb	Hot-Rolled (Cut Length)*	Cold-Reduced (Coiled or Cut Length)	
		Semi-Processed	Fully Processed
Field		9.875	
Armature	11.70	11.20	11.70
Elect.	12.40	11.90	12.40
Special Motor	13.55	13.05	13.55
Dynamo	14.65	14.15	14.65
Trans. 72	15.70	15.20	15.70
Trans. 65	16.30		
Trans. 58	16.80	Trans. 80	19.70
Trans. 52	17.85	Trans. 73	20.20
		Trans. 66	20.70

Producing points: Beech Bottom (W5); Brackenridge (A3); Granite City (G2); Indiana Harbor (I3); Mansfield (E2); Newport, Ky. (A9); Niles, O. (S1); Vandergrift (U1); Warren, O. (R3); Zanesville, Butler (A7).

ELECTRODES

Cents per lb. f.o.b. plant, threaded, with nipples, unboxed.

GRAPHITE			CARBON*		
Diam. (in.)	Length (in.)	Price	Diam. (in.)	Length (in.)	Price
24	84	27.25	40	100, 110	12.50
20	72	26.50	35	110	11.20
18	72	27.50	30	110	11.70
14	72	27.25	24	72	11.95
12	72	28.25	20	90	11.55
10	60	29.50	17	72	12.10
10	48	30.00	14	72	12.55
7	60	29.75	10	60	13.80
6	60	33.25	8	60	14.25
4	40	37.00			
3	40	39.25			
2 1/2	30	41.50			
2	24	64.00			

* Prices shown cover carbon nipples.

REFRACTORIES

Fire Clay Brick

Super duty, Mo., Pa., Md., Ky....	Carloads per 1000	\$185.00
High duty (except Salina, Pa., add \$5.00)		140.00
Medium duty		125.00
Low duty (except Salina, Pa., add \$2.00)		103.00
Ground fire clay, net ton, bulk...		22.50

Silica Brick

Mt. Union, Pa., Ensley, Ala.	\$158.00
Childs, Hays, Latrobe, Pa.	163.00
Chicago District	168.00
Western Utah	183.00
California	165.00
Super Duty	
Hays, Pa., Athens, Tex., Windham, Warren, O., Morrisville	163.00-168.00

Silica cement, net ton, bulk, Latrobe	29.75
Silica cement, net ton, bulk, Chicago	26.75
Silica cement, net ton, bulk, Ensley, Ala.	27.75
Silica cement, net ton, bulk, Mt. Union	25.75
Silica cement, net ton, bulk, Utah and Calif.	39.00

Chrome Brick

Standard chemically bonded, Balt.	\$109.00
Standard chemically bonded, Curtin, Calif.	119.00
Burned, Balt.	103.00

Magnesite Brick

Standard, Baltimore	\$140.00
Chemically bonded, Baltimore	119.00

Grain Magnesite	St. % to 1/4-in. grains
Domestic, f.o.b. Baltimore in bulk.	\$73.00
Domestic, f.o.b. Chewelah, Wash., in bulk	46.00
in sacks	\$2.00-54.00

Dead Burned Dolomite

Per net ton	
F.o.b. bulk, producing points in:	
Pa., W. Va., Ohio	\$16.75
Missouri Valley	15.00
Midwest	17.00

(Effective Dec. 24, 1958)

MERCHANT WIRE PRODUCTS

F.o.b. Mill	Standard Q Coated Nails		Fence Posts		Single Loop Bale Ties		Galv. Barbed and Twisted Barbless Wire		March Wire And		March Wire Galv.	
	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col	Col
Alabama City R3	173	187			212	193			9.00	9.55		
Aitkinpa J3**	173	190			190				9.00	9.675		
Atlanta J8**	175	192			214	198			8.75	9.425		
Bartonsville K2**	175	192			178	214	198		9.10	9.775		
Buffalo W6									9.00	9.55		
Chicago N4**	173	190			172	212	196		8.65	9.325		
Chicago R3									9.00	9.55		
Cleveland A6												
Cleveland A5												
Crawf. dv. M6**	175	192			214	198			9.10	9.775		
Donora, Pa. A5	173	187			212	193			9.00	9.55		
Duluth A5	173	187			212	193			9.00	9.55		
Fairfield, Ala. T2	173	187			212	193			9.00	9.55		
Galveston D4	9.10											
Houston S2	178	192			217	198			9.25	9.80		
Jacksonville M6	184	197			219	203			9.10	9.775		
Johnstown B3**	173	190			177				9.00	9.675		
Joliet, Ill. A5	173	187			212	193			9.00	9.55		
Kokomo C9	173	189			214	195			9.10	9.65		
L. Angeles B2**									9.95	10.625		
Kansas City S2*	178	192			217	198*			9.25	9.80		
Minneapolis C6	178	192			182	217	198*		9.25	9.80		
Monessen P6									8.65	9.325		
Palmer, Mass. W6									9.30	9.85		
Pittsburg, Cal. C7	192	210			213				9.60	10.15		
Rankin, Pa. A5	173	187							9.00	9.55		
Sa. Chicago R3	173	187							9.65	10.20		
S. San Fran. C6					236				9.95	10.50		
Sparrows Pt. B3**	175				214	198			9.10	9.775		
Struthers, O. Y1*					214				8.65	9.20		
Worcester A5	179								9.30	9.85		
Williamsport S5												

* Zinc less than .10%. ** 11-12% zinc. † Plus zinc extras. ‡ Wholesalers only.

C-R SPRING STEEL

Cents Per Lb F.o.b. Mill	CARBON CONTENT				
	0.26-0.40	0.41-0.60	0.61-0.80	0.81-1.05	1.06-1.35
Anderson, Ind. C4	8.95	10.40	12.60	15.60	18.55
Baltimore, Md. T8	9.50	10.70	12.90	15.90	18.85
Bristol, Conn. W12	9.50	10.70	12.90	15.90	18.85
Buffalo, N. Y. R7	8.95	10.40	12.60	15.60	18.55
Carnegie, Pa. S9	8.95	10.40	12.60	15.60	18.55
Cleveland A5	8.95	10.40	12.60	15.60	18.55
Dearborn S7	9.05	10.50	12.70		
Detroit D1	9.05	10.50	12.70	15.70	
Detroit D2	9.05	10.50	12.70		
Dover, O. G4	8.95	10.40	12.60	15.60	18.55
Evansville, Ill. M8	9.05	10.50	12.70	15.70	18.85
Spring Park, Ill. T8	9.05	10.40	12.60	15.60	18.55
Harrison, N. J. C11	9.10	10.55	12.80	15.80	18.85
Indianapolis R5	9.10	10.55	12.80	15.80	18.85
Los Angeles C1	11.15	12.60	14.80	17.80	
New Britain, Conn. S7	9.40	10.70	12.90	15.90	18.85
New Castle, Pa. B4	8.95	10.40	12.60	15.60	
New Haven, Conn. D1	9.40	10.70	12.90	15.90	
Pawtucket, R. I. N7	9.50	10.70	12.90	15.90	18.85
Riverdale, Ill. A1	9.05	10.40	12.60	15.60	18.55
Sharon, Pa. S1	8.95	10.40	12.60	15.60	18.55
Tranton, R4	10.70	12.90	15.10	18.30	
Wallingford W1	9.40	10.70	12.90	15.90	18.85
Warren, Ohio T4	8.95	10.40	12.60	15.60	18.75
Worcester, Mass. A5	9.50	10.70	12.90	15.90	18.85
Youngstown R3	9.10	10.55	12.80	15.80	18.85

BOILER TUBES

\$ per 100 ft. carload lots cut 10 to 24 ft. F.o.b. Mill	Size		Seamless		Elec. Weld
	OD- in.	B.W. Gs.	H.R.	C.D.	
Babcock & Wilcox	2	13	40.28	47.21	35.22
	2½	12	54.23	63.57	47.43
	3	12	62.62	73.40	54.77
	3½	11	73.11	85.70	63.93
	4	10	97.08	113.80	85.53
National Tube	2	13	40.28	47.21	35.22
	2½	12	54.23	63.57	47.43
	3	12	62.62	73.40	54.77
	3½	11	73.11	85.70	63.93
	4	10	97.08	113.80	85.53
Pittsburgh Steel	2	13	40.28	47.21	35.22
	2½	12	54.23	63.57	47.43
	3	12	62.62	73.40	54.77
	3½	11	73.11	85.70	63.93
	4	10	97.08	113.80	85.53

METAL POWDERS

Cents per lb, minimum truckload, delivered E. of Miss. River, unless otherwise noted.

Iron Powders

Compacting Powders

Electrolytic, imported, f.o.b.	29.50 to 33.00
Electrolytic, domestic	34.50
Sponge	11.25
Atomized	11.25
Hydrogen Reduced	11.25 to 12.00
Carbonyl	88.00

Welding Powders 8.10

Cutting and Scarfing Powders 9.10

Copper Powders

Electrolytic, domestic	41.00
Precipitated	40.50 to 45.00
Atomized	39.80 to 48.30
Hydrogen reduced, f.o.b.	43.25
Bronze	47.20 to 51.50
Chromium, electrolytic	19.00
Lead	42.00
Manganese, f.o.b.	33.60 to 33.95
Molybdenum	\$1.05 to \$1.03
Nickel	53.50
Nickel Silver	13.00
Nickel Steel	13.00
Solder	13¢ plus metal value
Stainless Steel, 302	\$1.07
Stainless Steel, 316	\$1.26
Steel, atomized, prealloyed, 4600 series	14.00 plus metal value
Tin	14¢ plus metal value
Titanium, 99.25+%, per lb.	\$11.25
Tungsten	\$3.15 (nominal)

BOLTS, NUTS, RIVETS, SCREWS

(Base discount, f.o.b. mill)

Pct. Discounts

Bolts	1-4 Containers	5 Containers	20,000 Lb.	40,000 Lb.
Machine				
3/4" and smaller x 3" and shorter	55	57	61	62
3/4" diam. x 3" and shorter	47	49 1/2	54	55
3/4" thru 1" diam. x 6" and shorter	37	39 1/2	45	46
3/4" thru 1" diam. longer than 6" and 1 1/2" and larger x all lengths	31	34	40	41
Roll thread, 3/4" and smaller x 3" and shorter	55	57	61	62
Carriage, lag, plow, tap, blank, step, elevator and fitting up bolts 3/4" and smaller x 6" and shorter	45	50 1/2	55	56

Note: Add 25 pct for less than container quantity. Distributor prices are 5 pct less on bolts and square nuts.

Nuts, Hex, HP reg. & hvy.

Full case or Keg price

3/4" in. or smaller	62
3/4" in. to 1 1/2" in. inclusive	56
1 1/2" in. and larger	51 1/2

C. P. Hex, reg. & hvy.

3/4" in. or smaller	62
3/4" in. to 1 1/2" in. inclusive	56
1 1/2" in. and larger	51 1/2

Hot Galv. Hex Nuts (All Types)

3/4" in. and smaller	41
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Semi-finished Hex Nuts

3/4" in. or smaller	62
3/4" in. to 1 1/2" in. inclusive	56
1 1/2" in. and larger	51 1/2

(Add 25 pct for broken case or keg quantities)

Finished

3/4" in. and smaller	65
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Rivets

Base per 100 lb

3/4" in. and larger	\$12.85
7/16" in. and smaller	15

Pct. Off List

Cap Screws

Discount (Packages)

Full Finished H. C. Heat Treat
New std. hex head, pack-
aged Full Case

3/4" diam. and smaller x 6" and shorter	54	42
3/4" diam. and 1" diam. x 6" and shorter	38	23
3/4" diam. and smaller x longer than 6"	..	..
3/4", 3/8", and 1" diam. x longer than 6"	..	..

1/4" through 3/4" dia. x 6" and shorter	59	48
3/4" through 1" dia. x 6" and shorter	45	32
Minimum quantity—1/4" through 3/4" diam., 15,000 pieces; 7/16" through 3/4" diam., 5,000 pieces; 3/4" through 1" diam., 2,000 pieces.		

Machine Screws & Stove Bolts

	Discount	Mach. Screws	Stove Bolts
Plain Finish			
Cartons	60		
Bulk			

To 1/4" diam.	Quantity		
25,000-and over	60	..	..
5/16 to 3/4" diam.	15,000-200,000	60	..

Machine Screws & Stove Bolt Nuts

	Discount	Hex	Square
In Cartons		16	19
In Bulk			

Quantity		
25,000-and over	15	16

STEEL SERVICE CENTERS

Metropolitan Price, dollars per 100 lb.

Cities	City Delivery & Charge	Sheets			Strip	Plate	Shapes	Bars		Alloy Bars			
		Hot-Rolled (18 ga. & hr.)	Cold-Rolled (15 gage)	Galvanized (10 gage)††	Hot-Rolled		Standard Structural	Hot-Rolled (merchant)	Cold- Finished	Hot-Rolled 4615 As rolled	Hot-Rolled 4140 Annealed	Cold-Drawn 4615 As rolled	Cold-Drawn 4140 Annealed
Atlanta		8.59	9.87	10.13	8.91	9.29	9.40	9.39	13.24*				
Baltimore	\$.10	8.65	9.35	9.09	9.15	9.10	9.65	9.55	11.80*	16.28	15.28	19.82	19.08
Birmingham		8.18	9.45	10.46	8.51	8.89	9.00	8.99					
Boston .....	.10	9.41	10.50	11.49	9.84	10.12	10.11	10.21	13.45*	16.79	15.79	20.29	19.56
Buffalo .....	.15	8.40	9.75	11.00	8.90	9.35	9.40	9.30	11.60*	16.34	15.55	19.01	19.30
Chicago .....	.15	8.40	9.60	10.65	8.66	9.04	9.15	9.14	9.30	16.20	15.20	19.70	18.95
Cincinnati .....	.15	8.58	9.65	10.70	8.93	9.42	9.71	9.46	11.68*	16.52	15.52	20.02	19.27
Cleveland .....	.15	8.51	9.69	10.80	8.78	9.28	9.54	9.25	11.40*	16.31	15.31	19.81	19.06
Denver .....	.20	9.60	11.84	12.94	9.63	9.96	10.04	10.00	11.19				20.84
Detroit .....	.15	8.66	9.85	11.02	9.03	9.41	9.71	9.45	9.66	15.46	15.48	18.81	19.23
Houston		8.10	8.60		8.15	8.45	8.05	8.10	11.60	16.20	15.25	19.65	18.95
Kansas City .....	.15	9.02	10.27	11.37	9.33	9.71	9.82	9.81	10.22	16.87	15.87	20.37	19.62
Los Angeles		6.70*	11.20- 11.80	12.20	9.15	9.10	9.00	9.10	12.95	17.30	16.35	21.30	20.60
Memphis .....	.15	8.55	9.80		8.60	8.93	9.01	8.97	12.11*				
Milwaukee .....	.15	9.54	9.73	10.79	8.80	9.18	9.37	9.28	9.54	16.34	15.34	19.84	19.09
New York	10	8.97	10.23	11.20	9.74	9.87	9.84	10.09	13.35*	16.16	15.60	20.10	19.35
Norfolk .....	.20	8.20			8.90	8.65	9.20	8.90	10.70				
Philadelphia .....	.10	8.30	9.35	10.44	9.35	9.25	9.20	9.50	12.05*	16.58	15.58	20.08	19.33
Pittsburgh .....	.15	8.50- 8.60	9.70- 9.85	11.05	8.76	9.05	9.15	9.14	11.40*	16.20	15.20	19.70	18.95
Portland		10.00*	11.75*	13.30*	11.95*	11.50*	11.10*	9.85*	15.30*	18.50	17.45	20.75	20.25
San Francisco .....	.10	9.75	11.20	11.40	9.85	10.10	9.95	10.25	13.70	17.05	16.35	21.05	20.60
Seattle		9.95	11.55	12.45	10.00	9.70	9.80	10.10	14.70	17.15	16.80	20.65	20.60
Spokane .....	.15	10.10	11.70	12.60	10.65	9.85	9.95	10.75	14.85	17.75	16.95	21.55	20.75
St. Louis .....	.15	8.78	9.98	11.03	9.04	9.42	9.63	9.52	9.93	16.58	15.58	20.08	19.33
St. Paul .....	.15	8.94	10.19	10.86	8.99	9.45	9.53	9.70*	10.16		15.41		19.21

Base Quantities (Standard unless otherwise keyed): Cold finished bars: 2000 lb or over. Alloy bars: 1000 to 1999 lb. All others: 2000 to 4999 lb. All HR products may be combined for quantity. All galvanized sheets may be combined for quantity. CR sheets may be combined with each other for quantity. **All sizes except 18 and 16 gage.
†† 10¢ zinc. ‡ Deduct for country delivery. * C1018—1 in. rounds. † 10 ga. x 36" x 120"; ‡ 20 ga. x 36" x 120"; § 26 ga. x 30" x 96"; ¶ 4 1/4" x 1" in lots of 1000 to 9999; ** sheared plate 1/4" x 84" in lots of 1000 to 9999; * 3" x 5.70" in lots of 1000 to 9999; † M-1020—1 in. rounds in lots of 1000 to 9999; ‡ 15 ga. & heavier.

(Effective Dec. 24, 1958)

ELECTROPLATING SUPPLIES

Anodes

(Cents per lb, f.o.b. shipping point)

Copper	
Roller elliptical, 18 in. or longer, 500 lb lots	42.25
Electrodeposited	33.25
Brass, 80-20, ball anodes, 2000 lb or more	46.50
Zinc, ball anodes, 2000 lb lots	17.50
(for elliptical add 1¢ per lb)	
Nickel, 99 pct plus, rolled carton, 5000 lb	1.0225
(Rolled depolarized add 3¢ per lb)	
Cadmium	1.45
Tin, ball anodes \$1.05 per lb (approx.)	

Chemicals

(Cents per lb, f.o.b. shipping point)	
Copper cyanide, 100 lb drum	65.90
Copper sulphate, 100 lb bags, per cwt.	22.15
Nickel salts, single, 100 lb bags	45.00
Nickel chloride, freight allowed, 100 lb	82.25
Sodium cyanide, domestic, f.o.b. N. Y., 200 lb drums	23.70
(Philadelphia price 24.15)	
Zinc cyanide, 100 lb	60.75
Potassium cyanide, 100 lb drum	45.50
N. Y.	
Chromic acid, flake type, 10,000 lb or more	30.44

CAST IRON WATER PIPE INDEX

Birmingham	125.8
New York	138.7
Chicago	140.9
San Francisco-L. A.	148.6

Dec. 1955, value, Class B or heavier 5 in. or larger, bell and spigot pipe. Explanation: p. 87, Sept. 1, 1955, issue. Source: U. S. Pipe and Foundry Co.

PIG IRON

Dollars per gross ton, f.o.b., subject to switching charges.

Producing Point	Basic	Fdry.	Mall.	Best.	Low Phos.
Birdsboro, Pa. B6	68.00	68.50	69.00	69.50	
Birmingham R3	62.00	62.50*			
Birmingham W9	62.00	62.50*	66.50		
Birmingham U4	62.00	62.50*	66.50		
Buffalo R3	66.00	66.50	67.00	67.50	
Buffalo H1	66.00	66.50	67.00	67.50	
Buffalo W6	66.00	66.50	67.00	67.50	
Chester P2	66.50	67.00	67.50		
Chicago I4	66.00	66.50	67.00		
Cleveland A5	66.00	66.50	67.00		71.00†
Cleveland R3	66.00	66.50	67.00		
Duluth I4	66.00	66.50	67.00	71.00†	
Erie I4	66.00	66.50	67.00	71.00†	
Everett M6	67.50	68.00	68.50		
Fontana K1	75.00	75.50			
Geneva, Utah C7	66.00	66.50			
Granite City G2	67.90	68.40	68.90		
Hubbard V1	66.00	66.50	67.00		
Ironton, Utah C7	66.00	66.50			
Midland C11	66.00	66.50			
Minnequa C6	68.00	68.50	69.00		
Monessen P6	66.00	66.50			
Neville Ia. P4	66.00	66.50	67.00	71.00†	
N. Tonawanda T1	66.00	66.50	67.00	71.00†	
Sharpville S3	66.00	66.50	67.00		
So. Chicago R3	66.00	66.50	67.00		
So. Chicago W8	66.00	66.50	67.00		
Svealand A2	68.00	68.50	69.00		
Toledo I4	66.00	66.50	67.00		
Troy, N. Y. R3	68.00	68.50	69.00	73.00	
Youngstown Y1			66.50		

DIFFERENTIALS: Add, 75¢ per ton for each 0.25 pct silicon or portion thereof over base (1.75 to 2.25 pct except low phos., 1.75 to 2.90 pct) 50¢ per ton for each 0.25 pct manganese or portion thereof over 1 pct, 32¢ per ton for 0.50 to 0.75 pct nickel, \$1 for each additional 0.25 pct nickel.

Add \$1.00 for 0.31-0.60 pct phos.

Silvery Iron: Buffalo (6 pct), H1, \$79.25; Jackson J1, I4 (Globe Div.), \$78.00; Niagara Falls (15.01-15.50), \$101.00; Keokuk (14.01-14.50), \$103.50; (15.51-16.00), \$106.50. Add \$1.00 per ton for each 0.50 pct silicon over base (6.01 to 6.50 pct) up to 18 pct. Add \$1.25 for each 0.50 pct manganese over 1.00 pct. Bossmen silvery pig iron (under .10 pct phos.): \$64.00. Add \$1.00 premium for all grades silvery to 18 pct.

† Intermediate low phos.

STAINLESS STEEL

Base price cents per lb. f.o.b. mill

Product	201	202	301	302	303	304	316	321	347	403	410	416	430
Ingot, reroll.	22.00	23.75	23.25	25.25	—	27.00	39.75	32.25	37.00	—	16.75	—	17.00
Slabs, billets	27.00	30.25	28.00	31.50	32.00	33.25	49.50	48.00	46.50	—	21.50	—	21.75
Billets, forging	32.75	36.50	37.25	38.00	41.00	40.50	62.25	47.00	55.75	28.25	28.25	28.75	28.75
Bars, struct.	42.00	43.00	44.25	45.00	48.00	47.75	73.00	55.50	64.75	33.75	33.75	34.25	34.25
Plates	39.25	40.00	41.25	42.25	45.00	45.75	71.75	54.75	64.75	30.00	30.00	31.25	31.00
Sheets	48.50	49.25	51.25	52.00	56.75	55.00	80.75	65.50	79.25	40.25	40.25	42.25	40.75
Strip, hot-rolled	36.00	39.00	37.25	40.50	—	44.25	69.25	53.50	63.50	—	31.00	—	32.00
Strip, cold-rolled	45.00	49.25	47.50	52.00	56.75	55.00	80.75	65.50	79.25	40.25	40.25	42.50	40.75
Wire CF; Rod HR	40.00	44.75	42.00	42.75	45.50	45.25	69.25	52.75	61.50	32.00	32.00	32.50	32.50
	42.25	43.90	44.25	47.25	47.00	71.75	54.50	63.75	73.25	33.75	33.75	33.75	33.75

STAINLESS STEEL PRODUCING POINTS:

Sheets: Midland, Pa., C11; Brackenridge, Pa., A3; Butler, Pa., A7; Vandergrift, Pa., U1; Washington, Pa., W2, J2; Baltimore, El; Middletown, O., A7; Massillon, O., R3; Gary, U1; Bridgeville, Pa., U2; New Castle, Ind., J2; Detroit, M2; Louisville, O., R5.

Strip: Midland, Pa., C11; Waukegan, Cleveland, A5; Carnegie, Pa., S9; McKeesport, Pa., F1; Reading, Pa., C2; Washington, Pa., W2; W. Lechburg, Pa., A3; Bridgeville, Pa., U2; Detroit, M2; Detroit, S1; Canton, Massillon, O., R3; Harrison, N. J., D3; Youngstown, R5; Sharon, Pa., S1; Butler, Pa., A7; Wallingford, Conn., U3 (plus further conversion extras); W1 (25¢ per lb. higher); New Bedford, Mass., R6; Gary, U1 (25¢ per lb. higher).

Bars: Baltimore, A7; S. Duquesne, Pa., U1; Munhall, Pa., U1; Reading, Pa., C2; Titusville, Pa., U2; Washington, Pa., J2; McKeesport, Pa., U1, F1; Bridgeville, Pa., U2; Dunkirk, N. Y., A3; Massillon, O., R5; S. Chicago, U1; Syracuse, N. Y., C11; Watervliet, N. Y., A3; Waukegan, A5; Canton, O., T3, R3; Ft. Wayne, I4; Detroit, R5; Gary, U1; Owensboro, Ky., G5; Bridgeport, Conn., N8.

Wire: Waukegan, A5; Massillon, O., R3; McKeesport, Pa., F1; Ft. Wayne, J4; Harrison, N. J., D3; Baltimore, A7; Dunkirk, A3; Monessen, P1; Syracuse, C11; Bridgeville, U2; Detroit, R5.

Structurals: Baltimore, A7; Massillon, O., R3; Chicago, Ill., J4; Watervliet, N. Y., A3; Syracuse, C11; S. Chicago, U1.

Plates: Baltimore, El; Brackenridge, Pa., A3; Chicago, U1; Munhall, Pa., U1; Midland, Pa., C11; New Castle, Ind., J2; Middletown, A7; Washington, Pa., J2; Cleveland, Massillon, R3; Coatesville, Pa., C15; Vandergrift, Pa., U1; Gary, U1.

Forging billets: Midland, Pa., C11; Baltimore, A7; Washington, Pa., J2; McKeesport, F1; Massillon, Canton, O., R3; Watervliet, A3; Pittsburgh, Chicago, U1; Syracuse, C11; Detroit, R5; Munhall, Pa., S. Chicago, U1; Owensboro, Ky., G5; Bridgeport, Conn., N8.

(Effective Dec. 24, 1958)

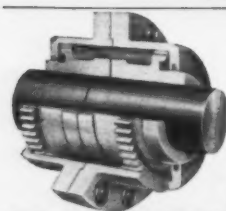
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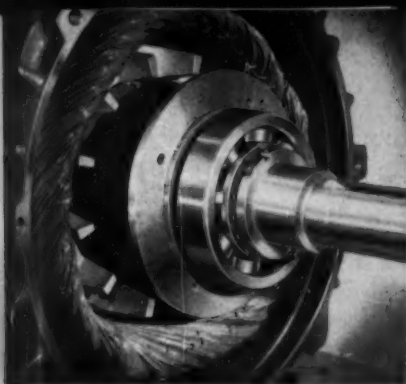
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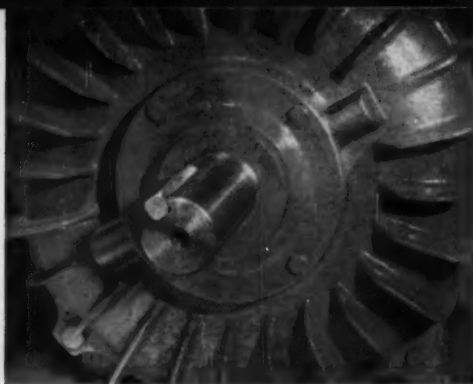
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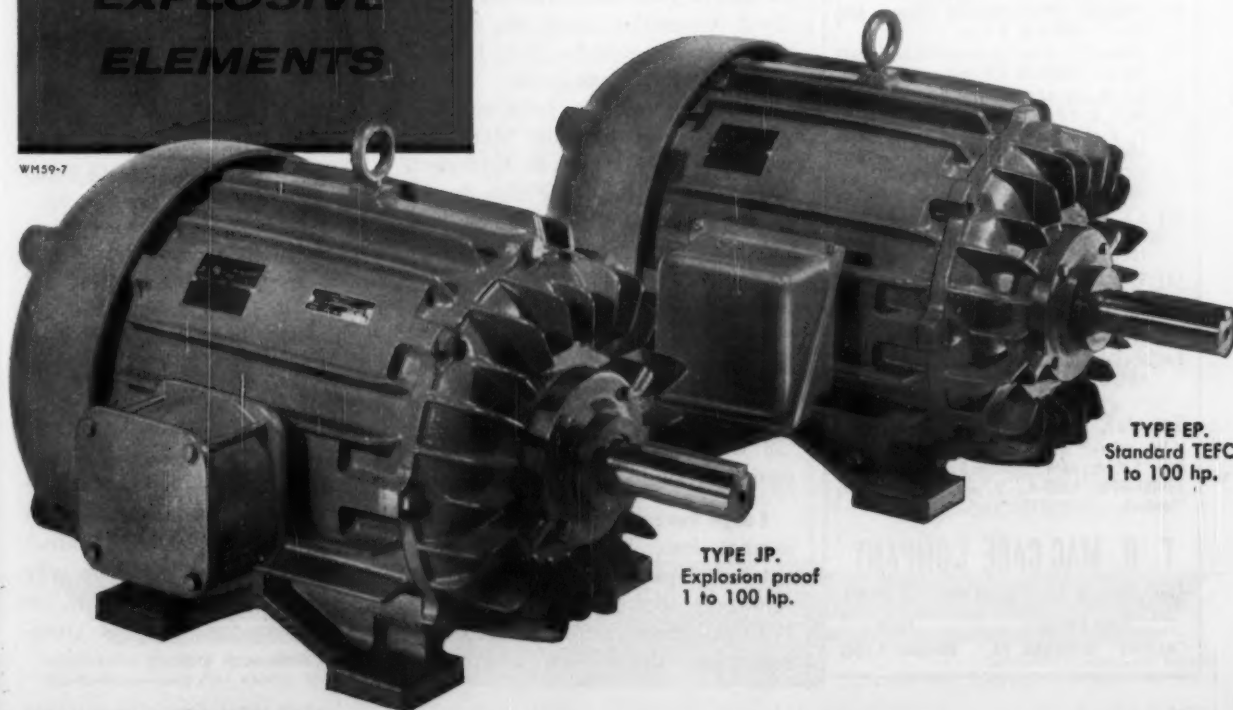
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THE CLEARING HOUSE

Used Machine Sales Should Gain in '59

Used equipment sales took an upturn late in 1958.

Dealers believe gains will continue this year and have improved inventories to fill buyer needs.

■ Used machinery dealers are confident 1959 will see a steady improvement in sales.

Recent trends are encouraging, the dealers report. Inquiries are now more numerous than for some time past. More and more customers now seem ready and willing to buy.

Late '58 Strength—While nationwide sales of used equipment declined steadily throughout 1957 this was not the case last year. However, preliminary reports, according to Randy Vinson, executive director of the Machinery Dealers National Association, show they averaged out about even for 1958. From August on they made gains.

During October (the latest month officially reported by the MDNA) they were 13.3 pct above September levels. And they were more than 18 pct above October, 1957.

While getting ready for a stronger market many dealers improved and upgraded their inventories in 1958. As a result buyers now can pick from a wide selection of good quality machines. The stocks include purchases made by the dealers in '58 when many firms put surplus equipment on the market.

Large Inventories — Today the average dealer has about 150 top-notch machines in his warehouse or showroom, according to the MDNA. With this largescale stock of used equipment, dealers are set-up to

satisfy buyer needs.

New National File—The Association's new master inventory file should make the job even easier. In this system—known as the Guaranteed Metalworking Machinery Plan—every member is issued a file of used equipment located in dealer stocks throughout the U. S.

Photos Included — The system had over 200 available machines in its first listing in late November and is expected to increase this to 350 or 400 by mid-January.

There are 280 classifications of machines with a breakdown into geographic divisions. The 5 by 8 in. file cards on each carry full specifications together with a photo of the unit, generally an actual one although it can be a catalogue shot.

These can be reproduced and sent to prospective buyers. Full specs are included plus data on available accessories and some price information.

All machines carry a 30-day guarantee. The 237 members of the association, coast to coast, have these cards.

First Results—The system has already made possible about a half dozen sales with a minimum of scrambling around to locate units, says Elmer W. Pfeil, Cleveland, president of the MDNA and the company bearing his name.

"In one case a New England dealer was able to find a machine in a nearby town, a unit he had been seeking for three months," says Mr. Pfeil. It was a cam type eyelet press and was speedily located in the first batch of cross-index cards sent out.

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MAGNETS

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PLANERS

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Straight Side
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1000	*West.	CW	450
600	*G.E.	M-6345-S	1800
500	G.E.	M-6345	1200
400	*G.E.	MTP-565	1200
350	*Al-Ch	ARYW	1800
300	Cr-Wh	SR70-R	1800
250	Al-Ch	ARY-626	1800
230	*G.E.	I-M-17A	720
200	G.E.	I-M-16	600
200	*West.	CW-1950A	514
150	Cr-Wh	SR-50R	1800
150	G.E.	I-M-15A	600
125	G.E.	I-M-15A	600
100	G.E.	I-E-13A	1800
100	G.E.	MT558	720
100	G.E.	I-M-15A	425
75	West.	CW-779	1200
75	G.E.	MT-347	1200
75	G.E.	MT-356	900
75	G.E.	MT-352	720
75	G.E.	I-M-10	600
60	G.E.	MT-356	1200
60	*West.	CW-762C	900
50	*G.E.	MT-536	1200

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No. 1/2x50" Pratt & Whitney Gun Barrel Riffing
Machine, Model M1821, m.d. latest
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Model 410 W.F. & John Barnes, Horizontal Boring
& Drilling Machine, m.d.

No. 410 Barnes Single Spindle Deep Hole, m.d.
Natco Horizontal Drill, holsteel model, m.d., 1942
Natco Horizontal Drill, 2 opposed B4F2 Head, 1943
3/4"x40" Bausch Double Horizontal Drilling Ma-
chine, m.d.

No. 445 W. F. & John Barnes Independent 2 spin-
dle Deep Hole Drilling & Boring Machine, late
Model 2F1 Natco Horizontal Boring & Drilling
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No. 1Bx50 Model 1806 Pratt & Whitney, 2 spin-
dle Deep Hole

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3 spindle 28" Cincinnati-Bickford Upright Drill,
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separate m.d. to each spindle
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Tapping
6 spindle Model M1613 Pratt & Whitney In Line
Vertical Drill
6 spindle W. F. & John Barnes Vertical Drilling
Machine, m.d.
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Type 114CB Moline Tool Boring Machine, 2 spindle
type, m.d.

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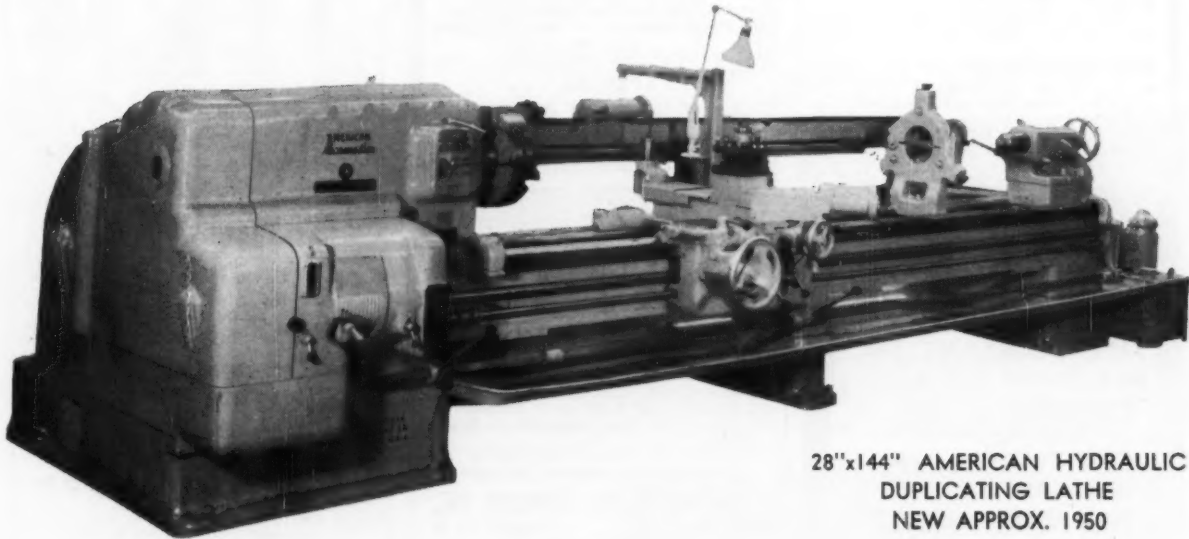
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24" x 120" cc American Engine Lathe, Hardened Ways, Rap. Trav., New Approx. 1946

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42" x 9' cc Niles Heavy Duty Engine Lathe (Rebuilt), New Approx. 1943

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#4 Warner & Swasey, Ram Type, Turret Lathe, Bar Feed, New Approx. 1950

#4L Gisholt H.D. Turret Lathe, 12" Hole, Cross Sliding Turret, New Approx. 1943

#30H Bullard Manutrol Automatic Lathe, New Approx. 1950

42"-50" Niles Vert. Boring Mill (3), New Approx. 1952

54" Bullard Vert. Boring Mill, Spiral Drive, New Approx. 1943

10" x 36" Norton Model CTU Grinder, New Approx. 1953

25" x 72" Landis Model DH Crankshaft Grinder, Brand New, Built Approx. 1952, Never Used

#1209 Bryant Internal Grinder, New Approx. 1951

56" x 56" x 12' Sellers, Power Flo, Double Housing Planer, New Approx. 1940

72" x 72" x 14' Cincinnati Hypro Openside Convertible Planer, Formica Ways, New Approx. 1940

72" x 72" x 16' Sellers, Power Flo, Double Housing Planer, New Approx. 1941

96" x 84" x 20' Cincinnati Hypro Double Housing Planer, New Approx. 1938

#56-96 Cincinnati Plain Hydraulic Mill, New Approx. 1950

#5 CSM Kearney & Trecker Vertical Mill, New Approx. 1948

#33-1448M Sundstrand Mill, New Approx. 1955

#56T Giddings & Lewis, 6", Oversize Table Type Horiz. Boring Mill, Out Riggers, Rotary Table, New Approx. 1940

Model OT Cincinnati 4 Spindle Profile Mill, Tracer Attach., New Approx. 1943

#24 Gleason Straight Bevel Gear Generator, 35" D.P., New Approx. 1942

#2LBM Leland Gifford 6 Spindle Hyd. Drill, #2 M.T., New Approx. 1952

#B48 Natco Drill, Adjustable Arms, 2" Upperjoints, New Approx. 1943

8' 19" Carlton Radial Drill, New Approx. 1945

#2 Cincinnati Flamatic Hardening Machine, New Approx. 1953

#5-54 Cincinnati Vertical Broach, New Approx. 1951

#5-42 DRV LaPointe Vertical Broach, New Approx. 1955

1600 Ton-Bliss Forging Press, New Approx. 1951

60" Monarch "T" Lathe, Contour Tracer Control, New 1953

2BL Natco Multiple Drill #2MT, Adj. Arms, New 1943

112AH Bryant Internal Grinding & Facing Machine, 2 Spindles, New 1950

VU4 LaPointe Vert. Hole Broach, 20 Ton, 60" Stroke, 2 Spindle, New 1957

5" Ohio Horiz. Boring Mill, Planer Type, New 1951

18-73 Michigan Shear Speed Gear Shaper, New 1950

15 Ton American Horizontal Broach, 60" Stroke, New 1943

340 T Giddings & Lewis 4" Horizontal Boring Mill, Extended Bed, New 1941

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1—48x42 WHEELABRATOR w/loader
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1—PANGBORN TABLAST, 8' Table
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Qu.	H.P.	Make	Type	Volts	RPM
1	3000	New Elliott	Enc. F.V.	475	330
1	3000	New Whas.	Enc. F.V.	525	600
1	2250	New Elliott	Enc. F.V.	600	200/300
1	2250	G.H.	MCF	180	400/500
1	1750	New Elliott	Enc. F.V.	250	175/250
8	1500	New Whas.	Enc. F.V.	525	600
1	1375	G.H.	MCF	415	1300
1	1300	G.H.	MCF-12	300	200/400
1	1200	G.H.	MCF	600	450/600
1	1000	Whas.		500	800/3000
1	940	Whas.	QM	350	140/170
3	940	S.B.	Enc. F.V.	600	800/1000
2	800	G.H.	MCF	250	400/750
2	750	G.H.	MCF	400	450/600
1	700	G.H.	MCF	600	300/730
1	700	G.H.	MCF	600	130/360
2	645	S.B.	Enc. F.V.	300	1000
4	600	Whas.		250	275/550
1	500	G.H.B.B.	TLP-3054H	250	200/3000
1	500	G.H.	MPC-10	250	188/400
8	450	Whas.		550	415
2	400	G.H.	CT-375	300	1000/1500
1	300	Cr. Wh.	W-105 R.H.	250	1200
2	300	G.H.	MCF	230	400
2	275	G.H.B.B.	TLC-100	250	2000/4000
1	225	G.H.B.B.		250	1150/2000
1	200	Rel. B.B.	T-444-D.P.	240	850
1	200	Whas.	CE-207-4	250	850/1300
1	150	Cr. Wh.	CMC-05H	380	1150
1	150	G.H.B.B.	TLC-74	250	1150/2500
1	150	G.H.B.B.	CD	600	350/750
1	130	G.H.B.B.	TLO-50	250	1950/5000
1	125/150	New Whas.	CB-310.3	230	300/1200
1	120	Rel. B.B.	1050T	230	575/900
2	125	Whas.	SK-180	230	450/1200
1	125	Whas.	SK-180	230	300/1050
1	100	G.H.	CDP-115	230	1750
1	80	Whas.	SK-123.9	240	3000/4500
1	75	Rel. B.B.	T-440 D.P.	240	500/1000
1	75	G.H.B.B.	CD-1305-D.P.	240	300/1000
1	60/75	Rel. B.B.	T-444-D.P.	240	300/1000
1	50	G.H.	CD-1125	230	600/1050
1	40	Rel. B.B.	TY 003	240	300/1200
1	35/23	Rel. B.B.	TY043	240	300/1200
1	40	G.H.	CD-1125	230	600/1050
1	40	Rel. B.B.	T-440-D.P.	240	1750
4	40	Rel. B.B.	388F. TDFC	230	500/1500
1	30/40	Rel. B.B.	T-444-D.P.	240	300/900

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Qu.	K.W.	Make	RPM	DC Volts	AC Volts
1	2000	G.E.	514	600	2300/4000
2	1750/2100	G.E.	514	350/300	2300/4000
1	1750	G.E.	514	600	2300/4000
1	1500	G.E.	720	600	6000/13200
1	1500	G.E.	600	600	11000/6600
1	1500	S.S. 2 unit	720	600	11000/6600
1		Cr. Wh.	unit		
2	1000	G.E.	720	600	2300
2	750	G.E.	720	330/300	6000/13200
1	500	G.E.	900	125/250	440
1	350	G.E.	900	125	440/2300/4100
1	300	G.E.	1200	250	2300/4000
1	300	G.E.	1200	250	440/2300
1	240	Whas.	900	125	220/440
1	200	G.H.	1200	250	440/550
1	200	Whas.	1200	250	2200
1	200	El. Mch.	1200	250	2300/4000
1	150	G.E.	1200	275	2300
1	150	Whas.	1200	275	2300
1	150	G.H.	1200	125	440
1	140	Cr. Wh.	600	125/250	2200
1	125	G.H.	1800	250	220/440
1	100	G.H.	1170	250	220/440
1	100	Cr. Wh.	1800	240	440
1	100	Cr. Wh.	1100	225	2200/550
1	100	G.H.	1200	250	2400/4100
3	75	Whas.	1200	125	440

TRANSFORMERS

Qu.	KVA	Make	Type	Ph.	Volts
3	5333	Whas.	OTBC	1	13800 x 2300
1	1500	G.E. auto	HT	3	4000/4500/4400
3	1000	G.E.	OA/FA	1	13800 x 230/460
2	750	G.E.	Pyranol	1	4800x25/55-255/105
3	500	Kuhl	OTBC	1	13200 x 6000
3	3333	G.E.	ITS-W4R1	3	3400/4160 240 x 400
3	3333	G.E.	OTBC	3	2400/4160 x 600
3	150	G.E.	OTBC	1	3300x2300/4000Y
1	50	Mol.	OTBC	3	13200 x 240-480
3	100	L.M.	LA	1	4160/7200x240/480

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Qu.	H.P.	Make	RPM	Type
14	12/15	Whas.	700/600	MCA-30, Series
1	25	Whas.	975	K-5, Series
2	25	G.H.	650	MDR-400
2	25	G.H.	725	CO-1008, Series
1	35	Whas.	450	CK-9 Comp. R.H.
1	50	Whas.	450	CK-9 R.H.
1	45	Whas.	600	CK-9 Comp. R.H.
3	50	G.H.	650	CDM-1830 Comp.
3	50	Whas.	525	CK-9 R.H.
3	50	Whas.	600	CK-9 Comp. R.H.
1	50	G.H.	525	CDM-1830A R.H.
1	50	Cr. Wh.	550	SW-50 Comp.
1	100	G.H.	475	CO-1832 R.H.
6	100/140	Whas.	500/415	MC-90 R.H.

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A			
*Abell-Howe Co.	298	*American Schiess Corporation 38 & 39	
ACCO Registered Slings American Chain & Cable Co., Inc.	82	American Shear Knife Co.	242
*ACF Valves—W-K-M Div., ACF Industries, Inc.	195	American Smelting & Refining Co. Continuous-Cast Products Department	305
Accredited Personnel Service	339	American Steel Foundries, Elmes Engineering Div.	62
Acimet Manufacturing Co.	330	*American Steel Warehouse Association Inc.	84
Acme Steel Co.	303	American Steel & Wire Div., United States Steel Corp. 294, 295	
*Airline Welding & Engineering. 239		*American Waldrich Mfg. Corp. 38 & 39	
Ajax Electric Co.	4 & 163	*Anso A Div. of General Aniline & Film Corp.	83
Ajax Electrothermic Corp.	4 & 163	*Arcair Company	230
Ajax Engineering Corp.	4 & 163	*Armco Steel Corp.	6
*Ajax Manufacturing Co., The.	259	Armco Steel Corp., Sheffield Division	84
Alan Wood Steel Co.	310	*Armstrong-Blum Manufacturing Co.	105
*Alemite Div., Stewart-Warner Corp.	47	Armstrong Bros. Tool Co.	70
*Allegheny Ludlum Steel Corp.	307	Arthur Equipment Co.	334
*Allied Research Products, Inc.	171	*Atlas Car & Mfg. Co., The.	289
Allis-Chalmers Mfg. Co., Industrial Equipment Div.	87	*Austin - Western Construction Equipment Div., Baldwin-Lima-Hamilton Corporation	261
Allen Foundry & Machine Works, Inc.	297	B	
American Air Compressor Corp.	337	Baldwin-Lima-Hamilton Corporation, Austin-Western Construction Equipment Div.	261
*American Chain & Cable Co., Inc. ACCO Registered Slings	82	Baldwin-Lima-Hamilton Corp., Hamilton Division	94
*American Gas Furnace Co.	76	Baldwin-Lima-Hamilton Corporation, Lima Construction Equipment Div.	95
*American Manganese Bronze Co.	340	*Barksdale Valves	179
*American Pulverizer Co.	300	*Bausch & Lomb Optical Company	183
American Roller Die Corporation.	162	Bay City Forge Co.	338
		Bay State Abrasive Products Co. 54 & 55	
		*Beatty Machine & Mfg. Co.	199
		Belyea Co., Inc.	336
		*Berger Tube Corporation	342
		Berliner, Joseph, Co.,	339
		Bertsch & Company	36
		Bethlehem Steel Co.	1
		Birdsboro Steel Foundry & Machine Co.	308
		*Borg-Warner Industrial Cranes	73
		Bristol Brass Corp., The.	190
		*Brown, David Inc.	253
		*Brown & Sharpe Mfg. Co., Machine Tool Div.	211
		*Buffalo Bolt Company, Division of Buffalo-Eclipse Corporation 315	
		*Buffalo Forge Co.	235
		Byers, A. M., Co.	263
C		D	
Carco Industries, Inc.	338	Davidson Pipe Co., Inc.	336
*Carlson, G. O., Inc.	48 & 49	Detroit Steel Corp.	266
*Carpenter Steel Co., The Alloy Tube Division	77	*Diamond Manufacturing Co.	260
Cattie, Joseph P., & Bros. Inc.	210	*Diamond Match Division of Diamond Gardner Corp. 148 & 149	
Central Steel & Wire Co.	140	DoAll Co., The.	101
Chase Brass & Copper Co., Inc.	252	Duralay Co., The.	299
Chicago Electric Co.	334 & 337	Dykem Company, The.	210
Chicago Tramrail Corp.	246	E	
*Cincinnati Shaper Co., The.	92	Eastern Machinery Co., The.	334
*Clark Equipment Co., Industrial Truck Division	69	Electric Furnace Co.	248
Cleveland Metal Abrasive Co., The.	67	*Electro Metallurgical Co., Division of Union Carbide Corp.	26 & 27
*Cleveland Punch & Shear Works Co., The.	262	*Electronic Control Systems Division of Stromberg-Carlson	237
*Cleveland Tramrail Division, The Cleveland Crane & Engineering Co.	90	Emerman Machinery Corp.	335
		Espen-Lucas Machine Works, The.	79
		Ex-Cell-O Corporation, Machinery Div.	97
		Excelsior Leather Washer Mfg. Co.	150

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F		L	
Fabricated Products Co.	234	Laclede Steel Co.	206
*Fairfield Manufacturing Co. ...	293	*Landis Machine Co., Inc. ...	16 & 17
*Falk Corporation, The	99	Lang Machinery Co., Inc.	336
Fate-Root-Heath Co.	265	Lansing Stamping Co.	292
*Fellows Gear Shaper Co., The	58 & 59	*Leeds & Northrup Co.	100
*Filmsort Company, The	292	Lima Construction Equipment Division, Baldwin-Lima-Hamilton Corporation	95
Finkl, A., & Sons Co.	56	*Lindberg Engineering Co., Pilot Plant Equipment Div.	218 & 219
*Flynn, Michael, Mfg. Co. ...	20 & 21	*Linde Co., Division of Union Carbide Corp.	96
*Foote Bros. Gear & Machine Corp.	222	*Lodge & Shipley Co.	65
*Foster, L. B., Company	146	Loma Machine Mfg. Co., Inc. ...	236
Frank, M. K.	334	Luria Bros., & Co., Inc.	317

G		M	
*General Aniline & Film Corp. ...	83	McKay Machine Co., The	215
*Gisholt Machine Co.	75	MacCabe, T. B., Co.	332
Goodman Electric Machinery Co.	337	Mackintosh-Hemphill, Division of E. W. Bliss Co.	71
Goodyear Tire & Rubber Co., Industrial Products Div.	12	Mahon, R. C., Co., The	338
Goss & DeLeeuw Machine Co. ...	330	*Malleable Castings Council 250 & 251	
Gray, G. A., Company ...	26 & 29	*Manhattan Rubber Div. Raybestos-Manhattan, Inc. 40 & 41	
Greenlee Bros., & Co.	302	Marathon Specialty Steels, Inc. ...	120
Griest Manufacturing Co., The ...	338	Mesta Machine Co.	30 & 31

H		N	
Hallden Machine Co., The	118	*National Broach & Machine Co. 77	
*Hamilton Division, Baldwin- Lima-Hamilton Corporation ..	94	National Business Bureau, Inc. ...	339
Hardinge Mfg. Co.	337	National Forge Co.	226
Harris Foundry & Machine Company	203	National Machinery Exchange ...	334
*Hayes, C. I., Inc.	11	*National Steel Corp.	81
Hayward Company, The	174	New England Pressed Steel Co. ...	338
Hendrick Manufacturing Co. ...	194	*Niagara Machine & Tool Works	44 & 45
Henry, A. T., & Company, Inc. ...	333	Northern Engineering Works	243
*Hevi-Duty Electric Company ...	256		
Hewitt-Robins	178		
*Houghton, E. F., & Co.	32		
Huebel Mfg. Co., Inc.	338		
Hughes, Arnold, Co.	337		
Hull, R. Q., & Co., Inc.	301		
Hyatt Bearings Div., General Motors Corp.	91		
Hyde Park Foundry & Machine Co.	255		
Hyman, Joseph, & Sons ...	336 & 339		

I		O	
*Inductotherm Corporation	233	*Oakite Products, Inc.	167
*Industrial Brownhoist Corp. ...	287	*Ohio Crankshaft Co., The	247
*Inflico Inc.	341	Ohio Seamless Tube, Div. of Copperweld Steel Co.	60
*Ingersoll-Rand Co.	238	Olson Manufacturing Co. 321 & 337	
Ingersoll Steel Division, Borg-Warner Corporation	258	Ornitz Equipment Corp.	337
*International Nickel Co., Inc., The	88		
Iron & Steel Products, Inc.	332		

K		P	
Kaiser Aluminum & Chemical Sales Inc., Kaiser Chemicals Division	142	*Pacific Industrial Manufactur- ing Company	132
Kaplan, M. S., Company	319	*Pennsylvania Engineering Corporation	131
*Kenco Manufacturing Co.	242	*Philadelphia Gear Corp.	249
Keystone Forging Company	338	Pickands Mather & Co.	306
Keystone Lamp Mfg. Corp.	339	*Pioneer-Central Div., Bendix Aviation Corp.	291
Keystone Steel & Wire Co.	151	Pittsburgh Engineering & Machine, Division of Pittsburgh Steel Foundry Corporation	85
Kidde, Walter, & Co., Inc.	15	Plymouth Locomotive Works, Div. of The Fate-Root-Heath Co. ...	265
King Foundries, Inc.	337	*Poole Foundry & Machine Co. ...	330
Kinnear Manufacturing Co., The ...	152	*Patter & Johnston, Subsidiary of Pratt & Whitney Co., Inc. 50 & 51	
Krieg, Victor J., Inc.	174	*Pratt & Whitney Co., Incorporated	52 & 53
Kutztown Foundry & Machine Corp.	210	Purdy Company, The	334

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R	*Union Carbide Corp., Linde Division 96
*R S Furnace Co., Inc. 13	United Engineering & Foundry Co. 107
Rail & Industrial Equip. Co., Inc. 336	United States Steel Export Co. 24, 25, 294, 295
*Raybestos-Manhattan, Inc., Manhattan Rubber Div. 40 & 41	United States Steel Corp. 24, 25, 294 & 295
*Republic Steel Corp. 42 & 43	Universal Machinery & Equip- ment Co. 334
Rhode Island Tool Co. 321	
Richards, Arklay S., Co., Inc. .. 340	
Roebbing's, John A., Sons Corp. 105	
*Rollway Bearing Co., Inc. 63	
Rosedale Foundry & Machine Co. 338	
*Russell, Burdall & Ward Bolt & Nut Co. 136	
Ryerson, Jos. T., & Son, Inc. 8	
S	
SKF Industries, Inc. 309	
Saling Manufacturing Company 338	
*Sandvik Steel, Inc. 198	
*Sciaky Bros. Inc. 33	
Sharon Steel Corp. 240 & 241	
*Sheffield Corporation, The, of Bendix Aviation Corporation 61	
Sheffield Division, Armco Steel Corp. 84	
*Shepard Niles Crane & Hoist Corp. 191	
Sieburg Industries, Inc. 338	
*Silent Hoist & Crane Co. 18	
Simonds Saw & Steel Co. 46	
Smith, Thomas, Co. 337	
*Southern Screw Co. 296	
*Standard Conveyor Company .. 170	
*Standard Pressed Steel Co. 74	
Steel & Tube Div., The, Timken Roller Bearing Co. 134	
Sun Oil Co. 144	
Sun Shipbuilding & Dry Dock Co. 78	
Superior Steel Div., Copperweld Steel Co. 117	
*Superior Tube Co. 66	
Surface Combustion Corp., Steel Mill Division 22 & 23	
T	
Tennessee Coal & Iron Div., United States Steel Corp. 294, 295	
*Thermal Research & Engineering Corp. 207	
Timken Roller Bearing Co., The, Steel & Tube Division 134	
*Torrington Co. 138	
*Towmotor Corporation 103	
*Townsend Company, The 227	
Trabon Engineering Corp. Inside Back Cover	
Tractor & Equipment Co 334	
Tube Methods Inc. 289	
U	
*Uddeholm Company of America, Inc. 14	
*Union Carbide Corp., Electro Metallurgical Division 26 & 27	
V	
*Valvair Corporation, Division of International Basic Economy Corp. 68	
Vanadium Corp. of America 98	
*Vickers Incorporated, Division of Sperry Rand Corporation 57	
*Victor Saw Works, Inc. 187	
*Virginia Gear & Machine Corp. 249	
Volco Brass & Copper Co. 323	
*Voss Engineering Co. 231	
W	
*W-K-M, Division of ACF Industries, Inc. 195	
Wagner Electric Corp 331	
*Wales-Strippit Division, Houdaille Industries, Inc. 264	
Wallack Bros. 339	
Ward Steel Co. 230	
Washington Steel Corporation .. 254	
Waterbury-Farrel Foundry & Machine Co. 80	
Weatherly Foundry & Mfg. Co. .. 337	
*Weirton Steel Co. 81	
Weiss, B. M., Co. 337	
Weiss Steel Co., Inc. 339	
*Wheelock, Lovejoy, & Co., Inc. 290	
Wheland Co., The 230	
Whisler Equipment Co. 337	
*Whistler, S. B., & Sons, Inc. 304	
Wickwire Spencer Steel Div., The, Colorado Fuel & Iron Corp. 34 & 35	
Wilcox Forging Corp. 337	
Wood, R. D., Co. 166	
Wyckoff Steel Co. 215	
Y	
*Yale & Towne Manufacturing Co., The 223	
Youngstown Sheet & Tube Co., The 19	
CLASSIFIED SECTION	
Clearing House 332-337	
Contract Manufacturing 337-338	
Employment Exchange 339	
Equipment & Materials Wanted 339	

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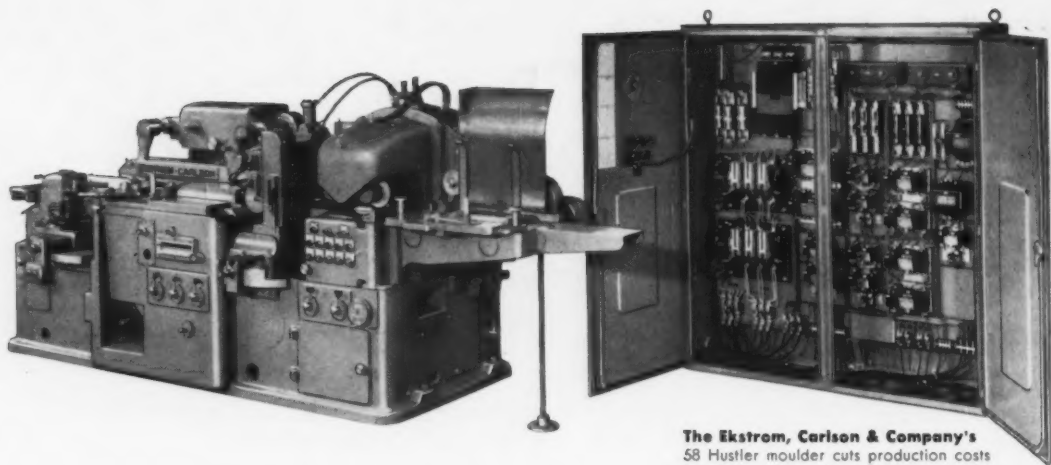
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